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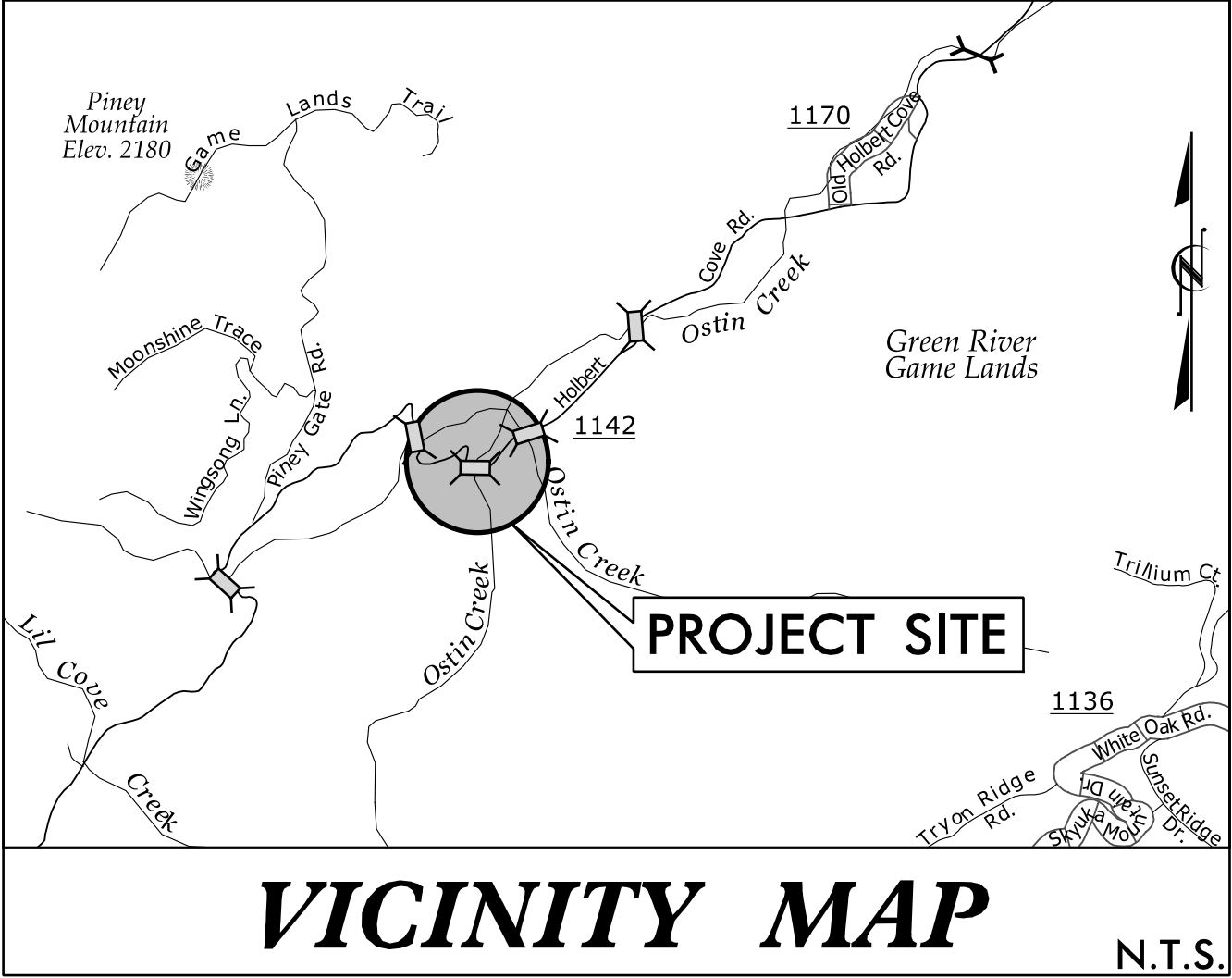
**This file or an individual page
shall not be considered a certified document.**

09/08/2019

PROJECT: 17BP.14.R.117

CONTRACT: DN00283

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



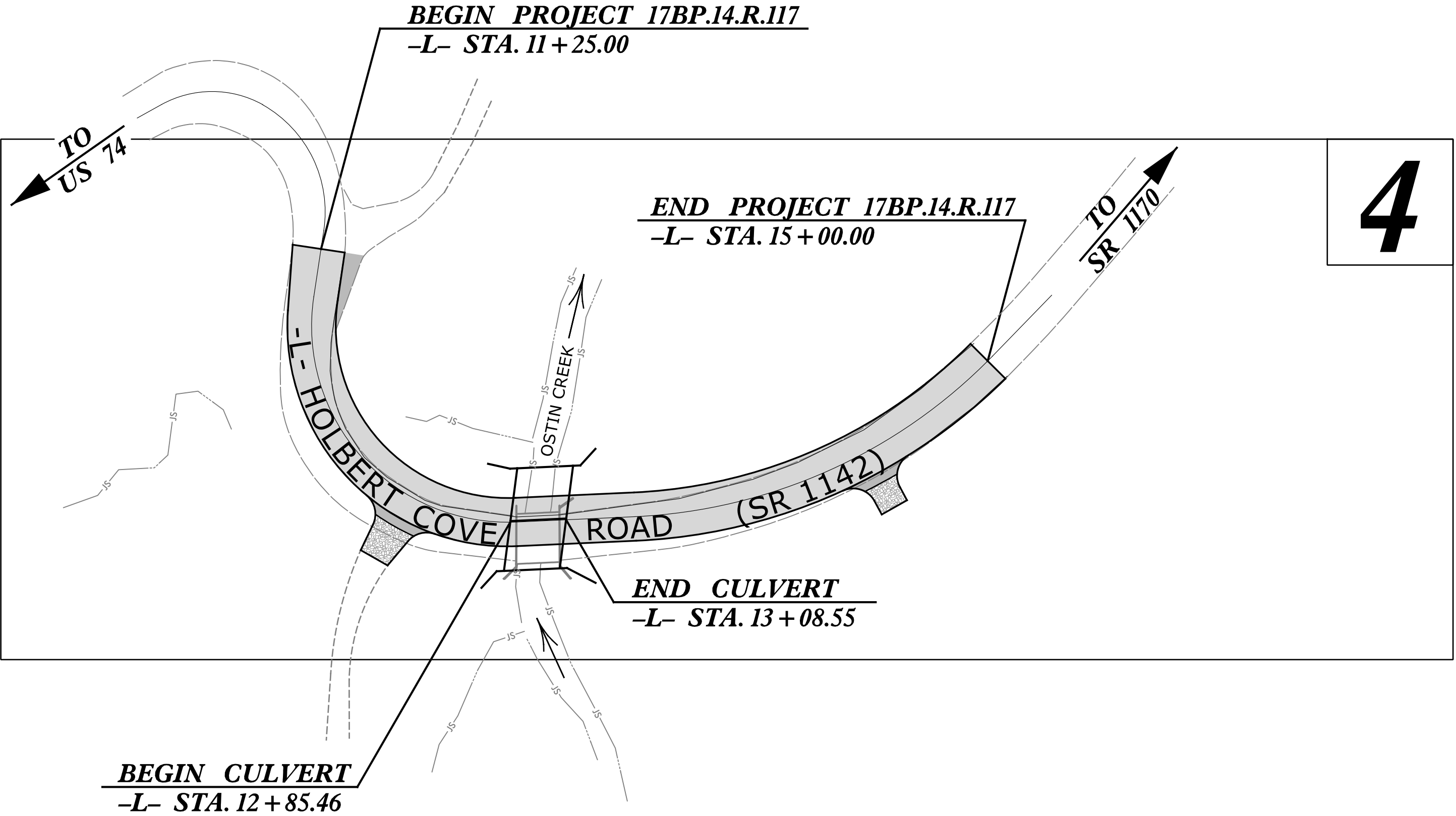
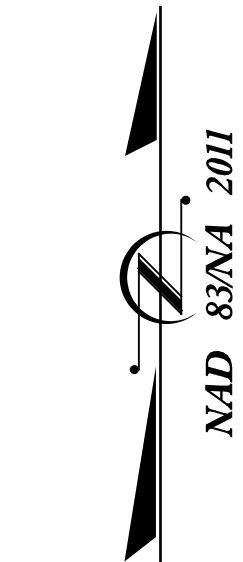
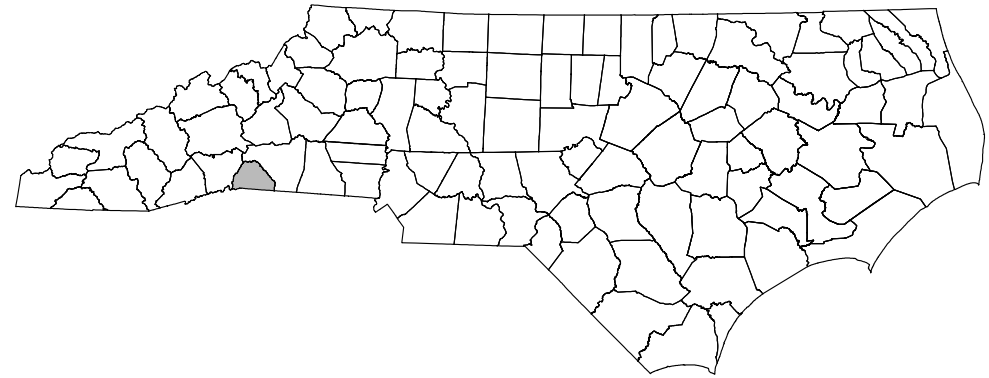
FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

POLK COUNTY

LOCATION: BRIDGE #740197 OVER OSTIN CREEK
ON SR 1142 (HOLBERT COVE ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & CULVERT

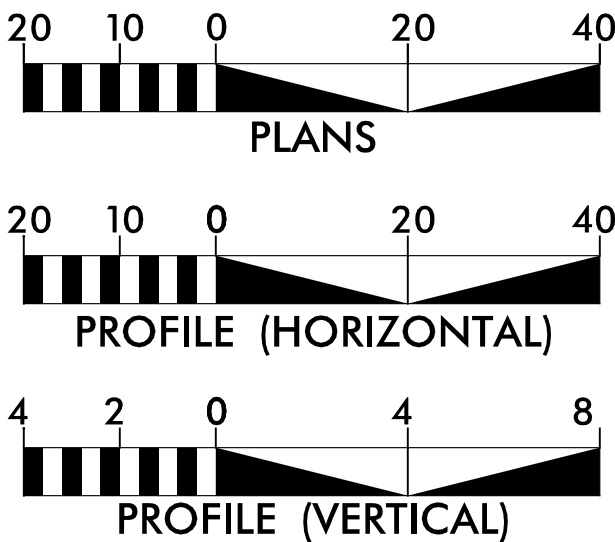


NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488-0902

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT (2010) = 310
DHV = NA
D = NA
T = 6%
V = 20 MPH
TTST = NA DUAL NA
FUNC CLASS = RURAL LOCAL
(SUBREGIONAL)

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.14.R.117 = 0.067 MILES
LENGTH CULVERT PROJECT 17BP.14.R.117 = 0.004 MILES
TOTAL LENGTH PROJECT 17BP.14.R.117 = 0.071 MILES

DESIGN EXCEPTION:
(1) SAG VERTICAL CURVE K



Plans Prepared by:

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
PHONE: 704-375-2438
NC Lic. No. G-3881

2018 STANDARD SPECIFICATIONS

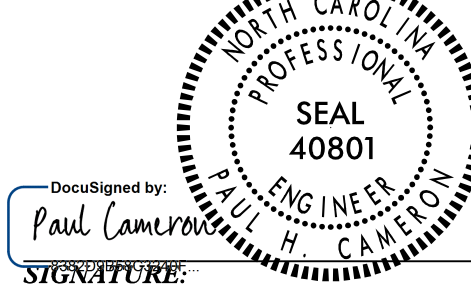
RIGHT OF WAY DATE:
JUNE 29, 2015

LETTING DATE:
MARCH 12, 2019

ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

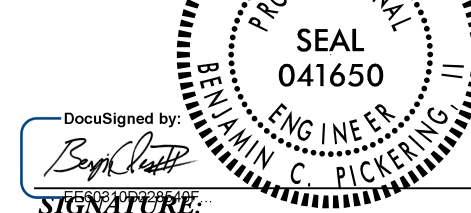
BENJAMIN C. PICKERING II, P.E.
PROJECT DESIGN ENGINEER

HYDRAULIC ENGINEER



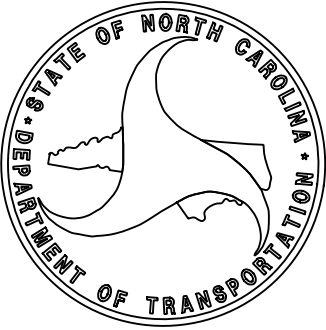
2/14/2019
P.E.

ROADWAY DESIGN ENGINEER



2/13/2019
P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



12/05/11

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	1B

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Known Soil Contamination: Area or Site	
Potential Soil Contamination: Area or Site	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

Baseline Control Point	
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite RW Marker	
Proposed Control of Access Line with Concrete CA Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage / Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	

Proposed Permanent Easement with Iron Pin and Cap Marker	
--	--

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
Single Tree	
Single Shrub	
Hedge	
Woods Line	

VEGETATION:

Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

POWER:	
Existing Power Pole	
Proposed Power Pole	
Existing Joint Use Pole	
Proposed Joint Use Pole	
Power Manhole	
Power Line Tower	
Power Transformer	
U/G Power Cable Hand Hole	
H-Frame Pole	
Recorded U/G Power Line	
Designated U/G Power Line (S.U.E.*)	

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Booth	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
Recorded U/G Telephone Cable	
Designated U/G Telephone Cable (S.U.E.*)	
Recorded U/G Telephone Conduit	
Designated U/G Telephone Conduit (S.U.E.*)	
Recorded U/G Fiber Optics Cable	
Designated U/G Fiber Optics Cable (S.U.E.*)	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
Recorded U/G Water Line	
Designated U/G Water Line (S.U.E.*)	
Above Ground Water Line	

TV:

TV Satellite Dish	
TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
Recorded U/G TV Cable	
Designated U/G TV Cable (S.U.E.*)	
Recorded U/G Fiber Optic Cable	
Designated U/G Fiber Optic Cable (S.U.E.*)	

GAS:

Gas Valve	
Gas Meter	
Recorded U/G Gas Line	
Designated U/G Gas Line (S.U.E.*)	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
Recorded SS Forced Main Line	
Designated SS Forced Main Line (S.U.E.*)	

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	

6/22/99

SURVEY CONTROL SHEET 74-0197

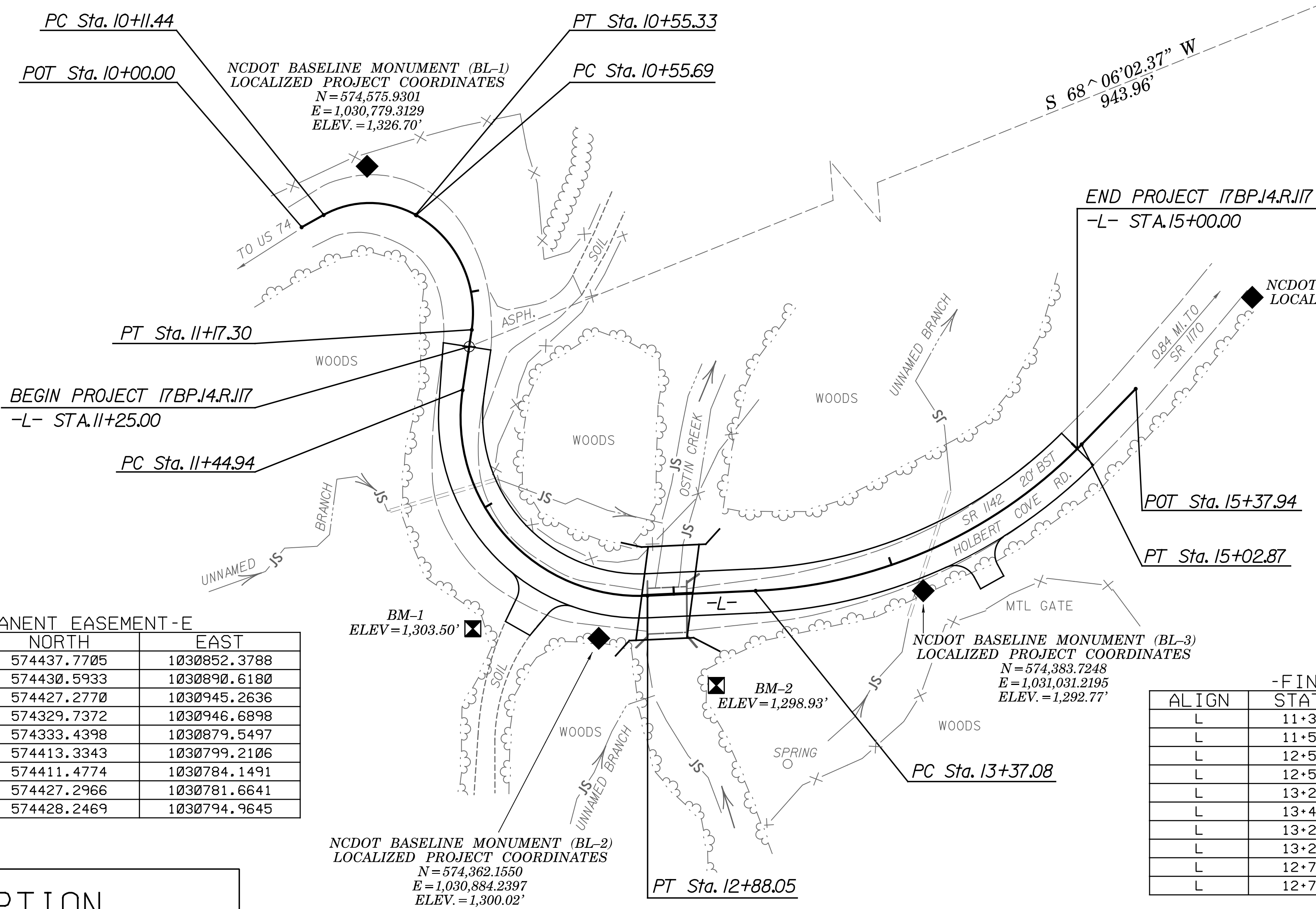
-FINAL-

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	1C-1
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL-1	574575.9301	1030779.3129	1326.70	10+32.36	16.63 LT
2		BL-2	574362.1550	1030884.2397	1300.02	12+69.64	20.91 RT
3		BL-3	574383.7248	1031031.2195	1292.77	14+09.05	15.92 RT
4		BL-4	574516.5672	1031180.2325	1287.22	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION = 1303.50
N 574366.48 E 1030827.24
BL STATION 7+09.14 49.26' RIGHT
NAIL IN BASE OF 12" POPLAR

BM2 ELEVATION = 1298.93
N 574340.83 E 1030937.54
BL STATION 7+87.78 28.84' RIGHT
NAIL IN BASE OF 5" MAPLE



NCDOT GPS MONUMENT (740125 GPS-101)
LOCALIZED PROJECT COORDINATES
N=574,846.3290
E=1,031,701.4359
ELEV.=1,296.07'



-L- FINAL			
TYPE	STATION	NORTH	EAST
POT	10+00.00	574548.3349	1030749.6711
PC	10+11.44	574553.8932	1030759.6688
PT	10+55.33	574553.7683	1030801.6807
PC	10+55.69	574553.9440	1030801.3691
PT	11+17.30	574501.8660	1030826.7454
PC	11+44.94	574474.5344	1030822.5978
PT	12+88.05	574381.4648	1030906.3553
PC	13+37.08	574383.6889	1030955.3337
PT	15+02.87	574450.0246	1031103.0143
POT	15+37.94	574475.1542	1031127.4709

-FINAL- ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+94.00	-25.00	574437.7705	1030852.3788
L	12+55.00	-47.00	574430.5933	1030890.6180
L	13+29.00	-44.00	574427.2770	1030945.2636
L	13+26.00	53.50	574329.7372	1030946.6898
L	12+70.00	50.00	574333.4398	1030879.5497
L	11+93.00	33.51	574413.3343	1030799.2106
L	11+90.00	48.00	574411.4774	1030784.1491
L	11+80.00	45.00	574427.2966	1030781.6641
L	11+82.00	32.00	574428.2469	1030794.9645

-FINAL- ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+32.00	-24.07	574483.7214	1030848.3334
L	11+50.00	-25.00	574467.3137	1030846.8985
L	12+59.00	-25.00	574409.1075	1030885.4213
L	12+59.00	-41.00	574424.3287	1030890.3526
L	13+29.00	-38.00	574421.2832	1030945.5358
L	13+45.00	-20.71	574404.8279	1030961.5520
L	13+26.00	31.18	574352.0357	1030945.6772
L	13+26.00	46.50	574336.7314	1030946.3722
L	12+70.00	43.00	574340.3298	1030880.7857
L	12+70.00	31.67	574351.4785	1030882.7857

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "740125 GPS-101" WITH NAD 83 (NSRS 2011) STATE PLANE GRID COORDINATES OF NORTHING: 574846.3290(++) EASTING: 1031701.4359(++) ELEVATION: 1296.07(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99981664 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "740125 GPS-101" TO -L- STATION 11+25.00 IS S 68°06'02.37" W 943.96(++) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

GEOID MODEL - G12ANC
NOTE: DRAWING NOT TO SCALE

NOTES:

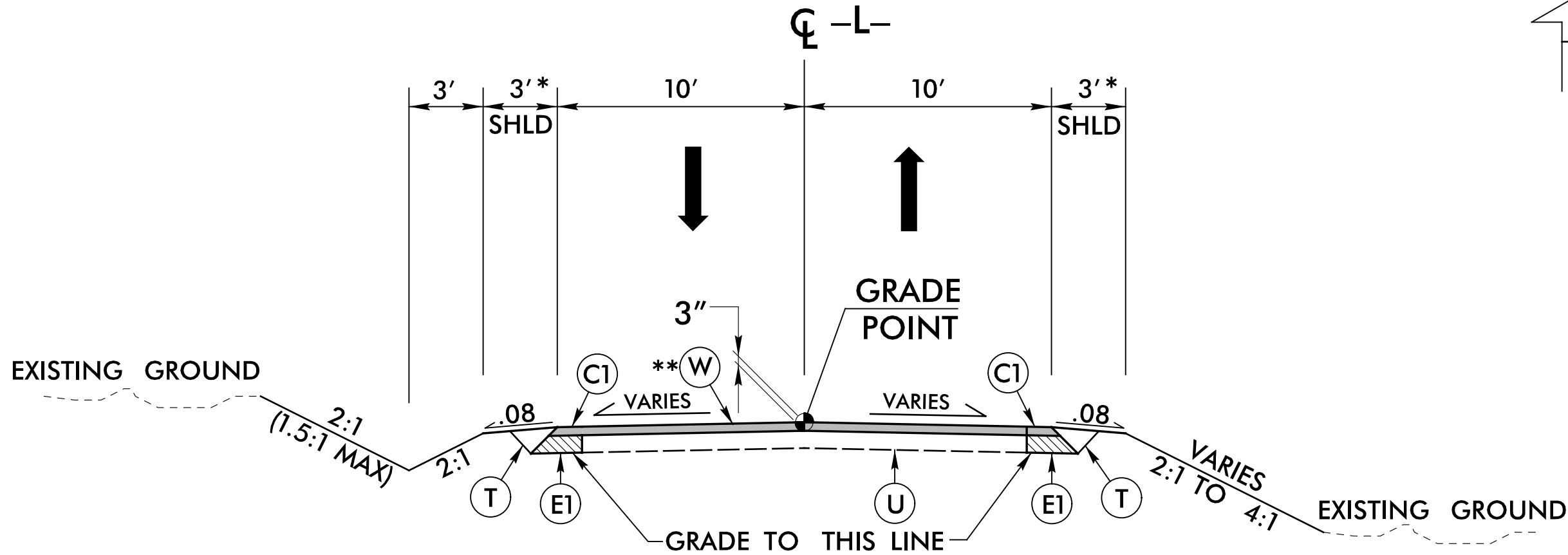
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
740197_LS_CONTROL.TXT

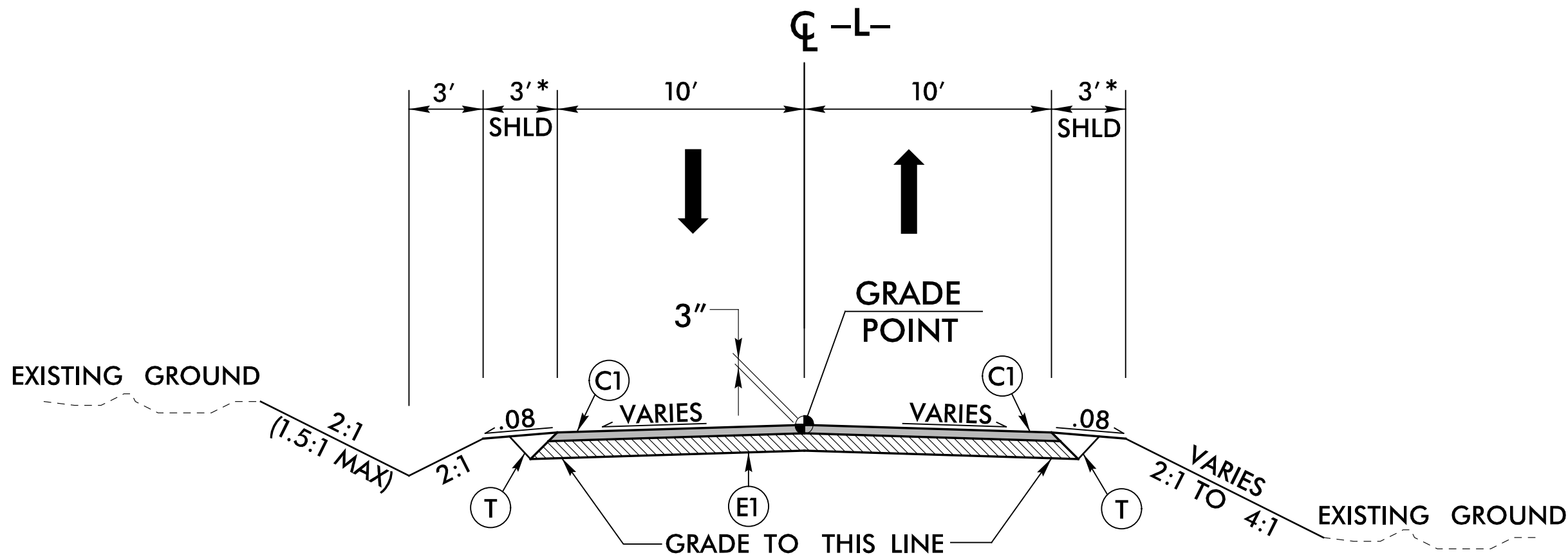
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER CONTROL INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

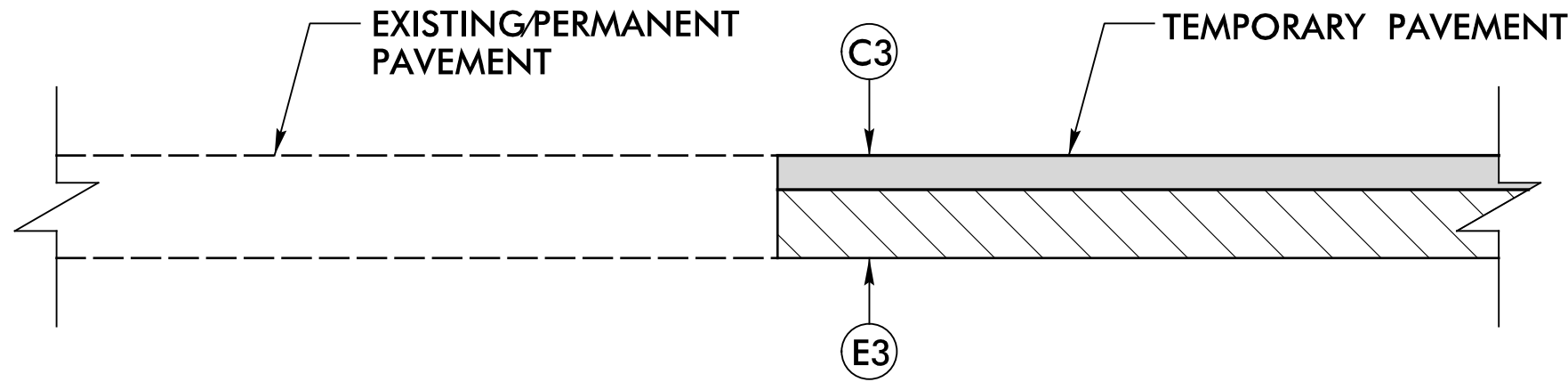
8/17/99



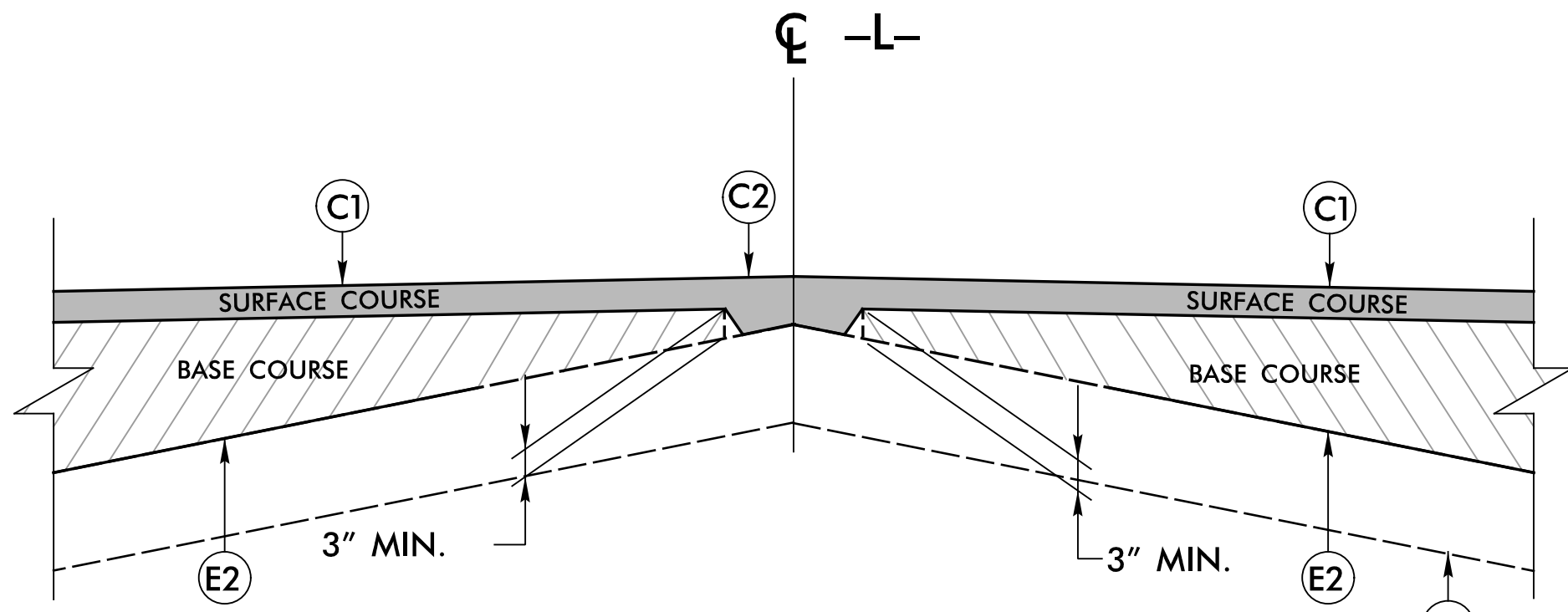
TYPICAL SECTION NO. 1
-L- STA. 11+25.00 TO STA. 12+70.00
-L- STA. 13+25.00 TO STA. 15+00.00
NOTE: SEE PLAN FOR SUPER ELEVATION RATES AND TRANSITIONS
* 6'-0" WITH GUARDRAIL



TYPICAL SECTION NO. 2
-L- STA. 12+70.00 TO STA. 13+25.00
NOTE: SEE PLAN FOR SUPER ELEVATION RATES AND TRANSITIONS
* 6'-0" WITH GUARDRAIL



TEMPORARY PAVEMENT DETAIL
NOT TO SCALE
(SEE TRAFFIC CONTROL PLANS)



****DETAIL SHOWING METHOD OF WEDGING (W)**
NOT TO SCALE

PAVEMENT SCHEDULE	
ITEM	DESCRIPTION
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO EQUAL LAYERS
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
C3	PROP. APPROX. 2" ASPHALT CONCRETE BASE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE
E3	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING – SEE DETAIL THIS SHEET

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO.
17BP.14.R.117

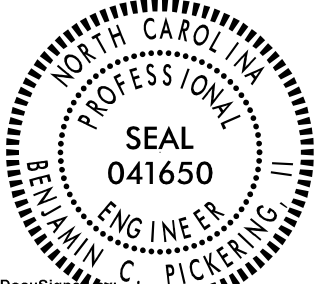
SHEET NO.
2A-1

POLK COUNTY

CULVERT #740197

ROADWAY DESIGN ENGINEER


PAVEMENT DESIGN ENGINEER



SEAL
041650
ENGINEER
BENJAMIN C. PICKERING

1/30/2019

Plans Prepared By:

**AMERICAN**
Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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UNLESS ALL SIGNATURES COMPLETED

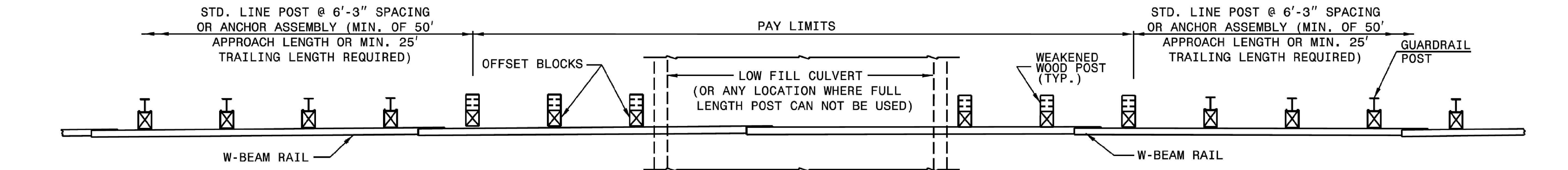
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	2B-1
POLK COUNTY	CULVERT #740197
Plans Prepared By:	
 8008 CORPORATE CENTER DRIVE, SUITE 110 CHARLOTTE, NORTH CAROLINA 28226 NC Lic. No. C-3881	

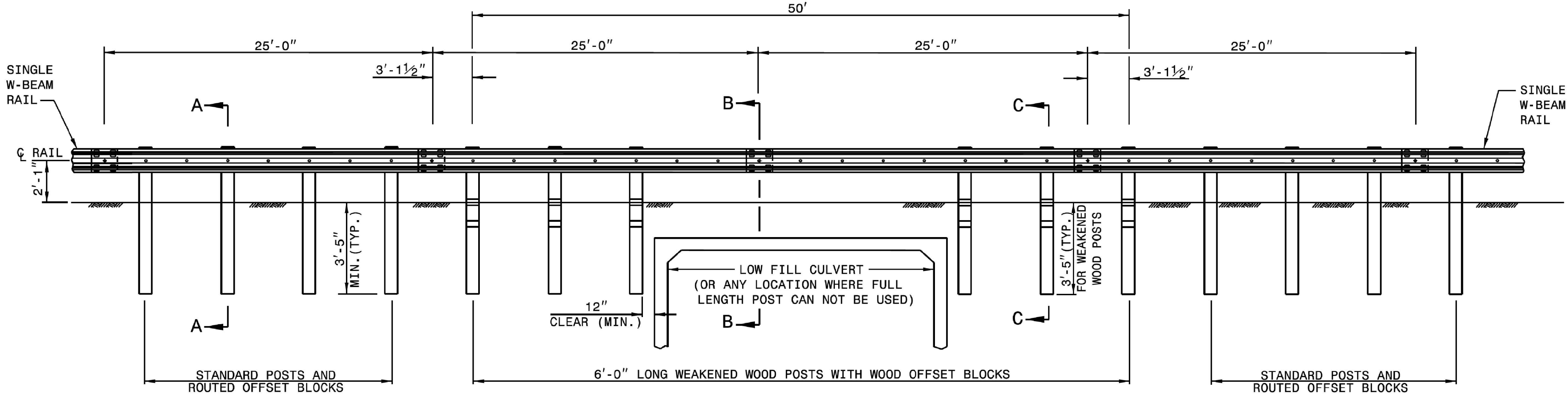
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

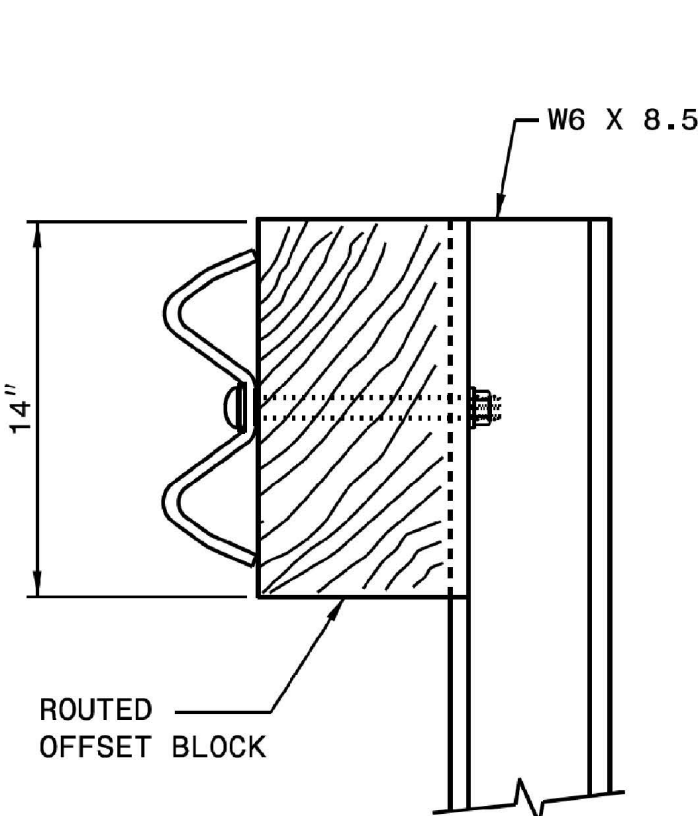
SHEET - OF -
862D01



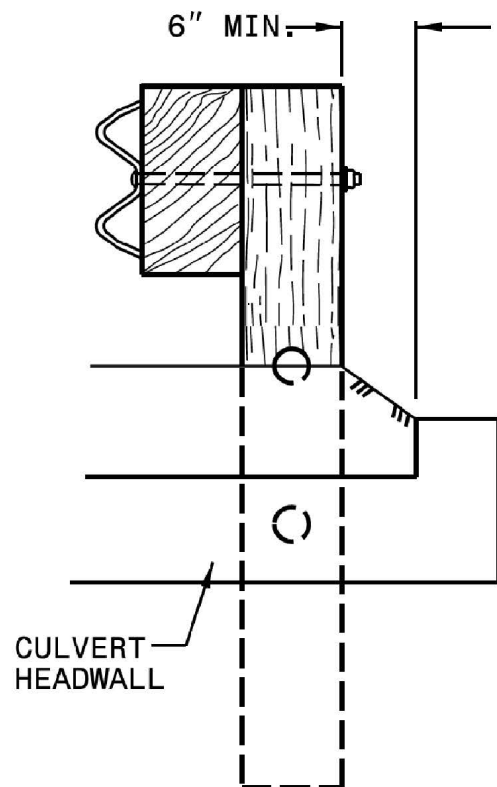
PLAN



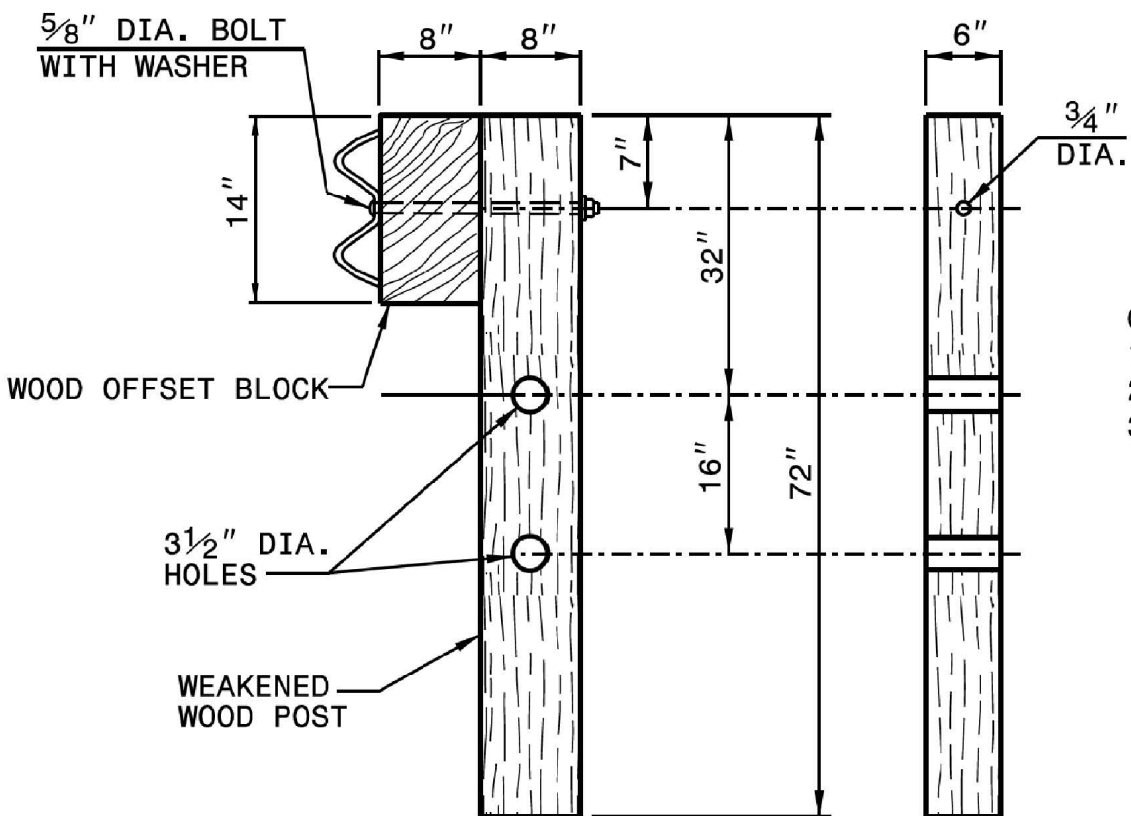
**ELEVATION
25'-0" GUARDRAIL SPAN**



SECTION A-A



SECTION B-B



**SECTION C-C
FRONT
WEAKENED WOOD POST**

- GENERAL NOTES:
1. LAP RAIL IN THE DIRECTION OF TRAFFIC FLOW.
 2. SEE ROADWAY PLANS FOR LOCATIONS AND CONTINUATION OF RAIL OR END SECTIONS.
 3. MINIMUM DISTANCE OF 5 FEET BEHIND THE GUARDRAIL SHOULD BE CLEAR OF ANY FIXED-OBJECT HAZARDS THAT COULD SNAG AN IMPACTING VEHICLE.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN


SHEET - OF -
862D01



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UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
25'-0" CLEAR SPAN GUARDRAIL PLACEMENT	
ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

COMPUTED BY: BCP DATE: 1/25/19
CHECKED BY: ACJ DATE: 1/25/19

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	3B-1
POLK COUNTY	CULVERT #740197
Plans Prepared By:	
 AMERICAN Engineering 8008 CORPORATE CENTER DRIVE, SUITE 110 CHARLOTTE, NORTH CAROLINA 28226 NC Lic. No. C-3881	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SUMMARY OF EARTHWORK

(in Cubic Yards)

STATION	STATION	UNCL EXCAV.	EMBANK.	BORROW	WASTE
PHASE 1					
-L- STA. 11 + 25	-L- STA. 15 + 00	2	153	151	0
PHASE 2					
-L- STA. 11 + 25	-L- STA. 15 + 00	20	102	82	0
PROJECT TOTALS:		22	255	233	0
TRAFFIC MANAGEMENT EMBANKMENT				20	
LOSS DUE TO CLEARING AND GRUBBING				39	
T.M. EMBANKMENT TO REPLACE BORROW				-20	
PROJECT TOTALS		-17	255	272	
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS				14	0
GRAND TOTALS:		-17		286	
SAY:		0		290	

EST UNDERCUT = 50 CY
EST SELECT GRANULAR MATERIAL = 50 CY

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT&TCL	YD
-L-	11 + 25	12 + 36	RT	84.22
-L-	12 + 49	12 + 70	RT	16.11
-L-	13 + 25	14 + 25	RT	33.11
GRAND TOTALS:				133.44
SAY:				140

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAMES
80	4	CHARLES H. REVIS
81	4	THAD JOHNSON ESTATE
82	4	JOSEPH P. MANGAN
83	4	SANDLER PARKER, LLC.

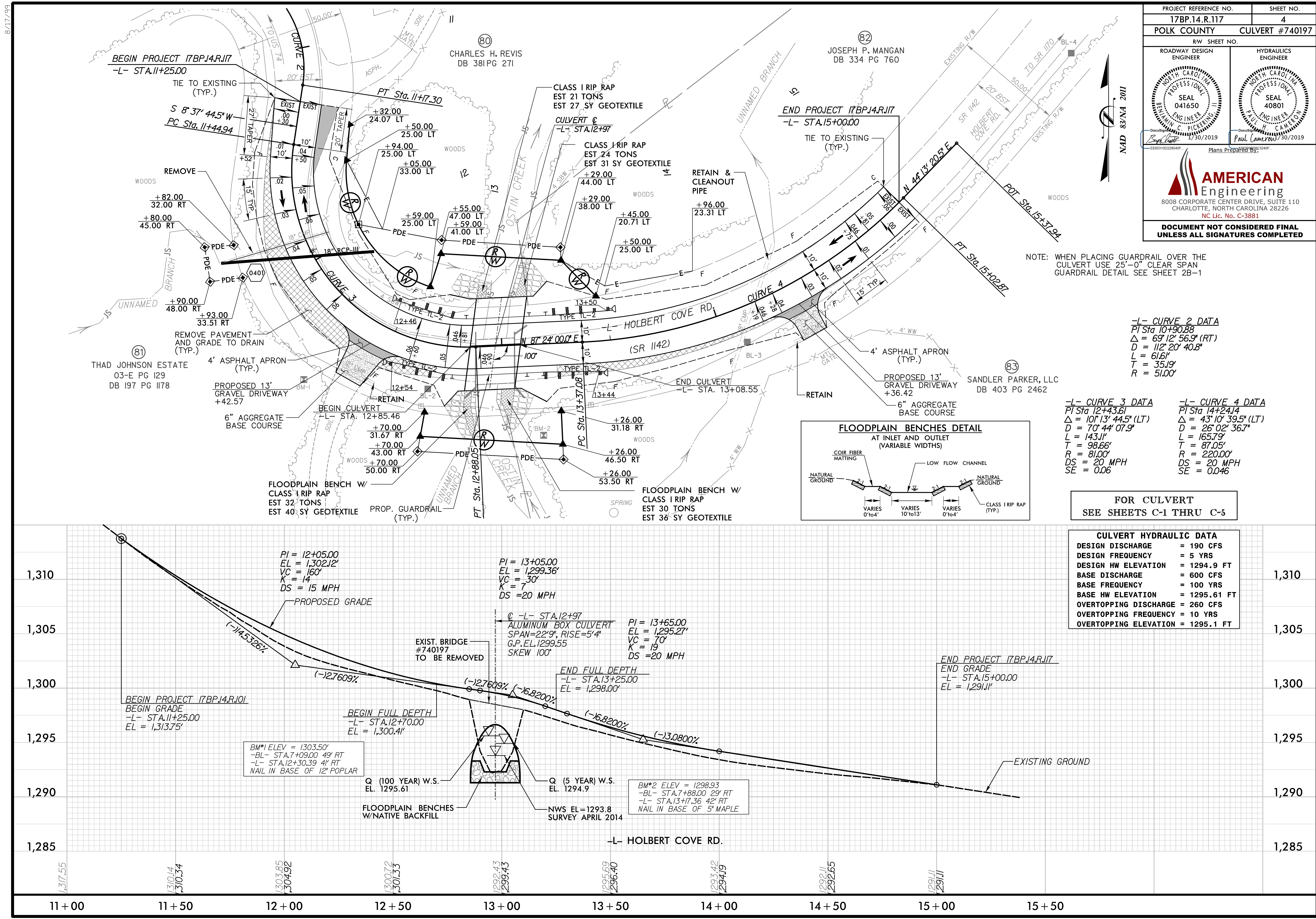
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

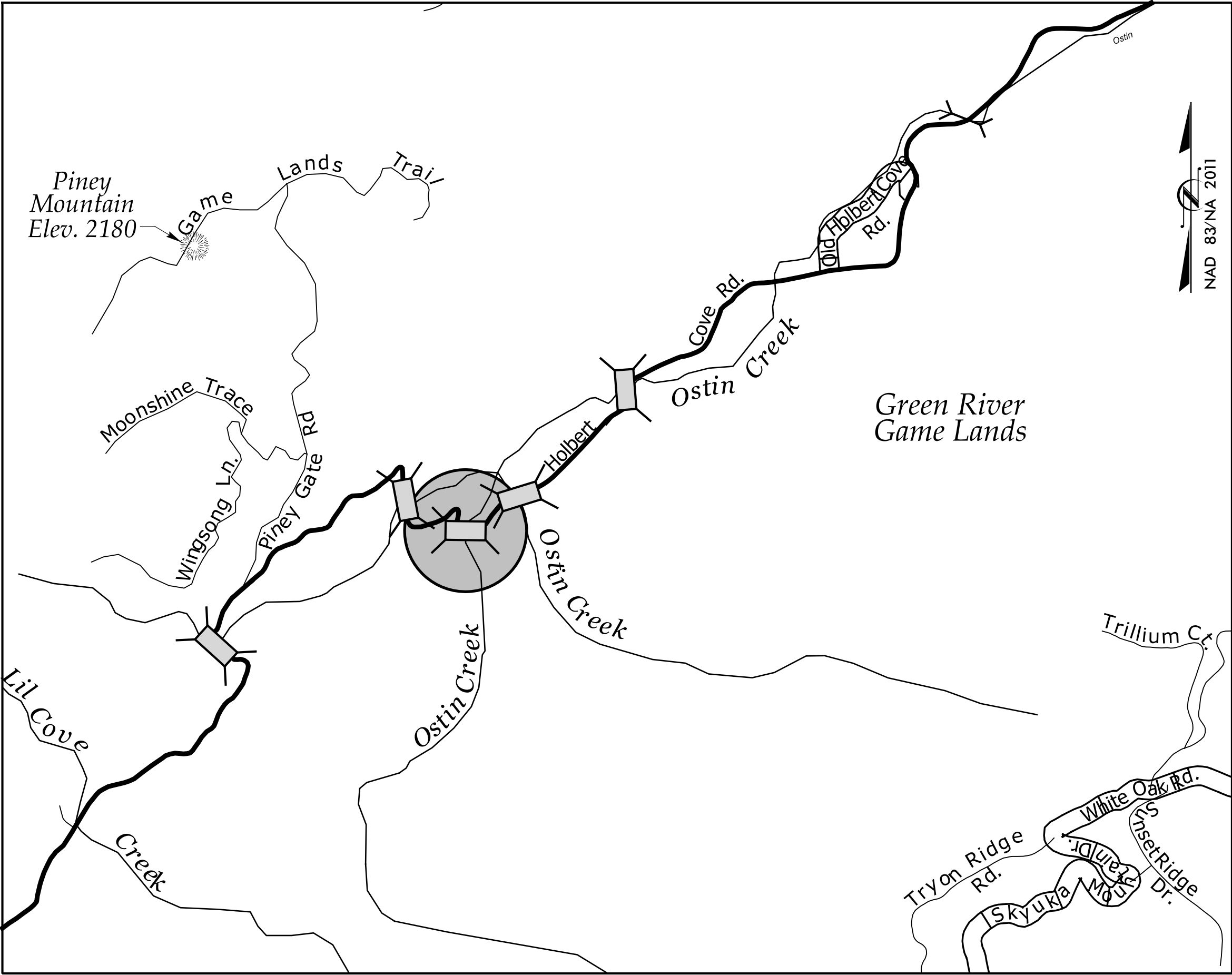
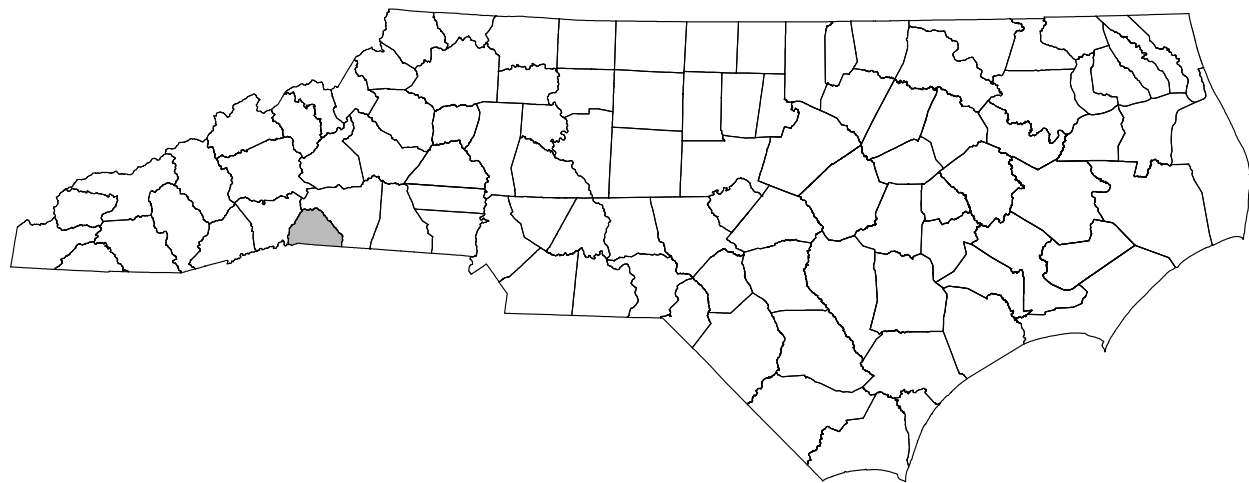
[illegible]



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

POLK COUNTY



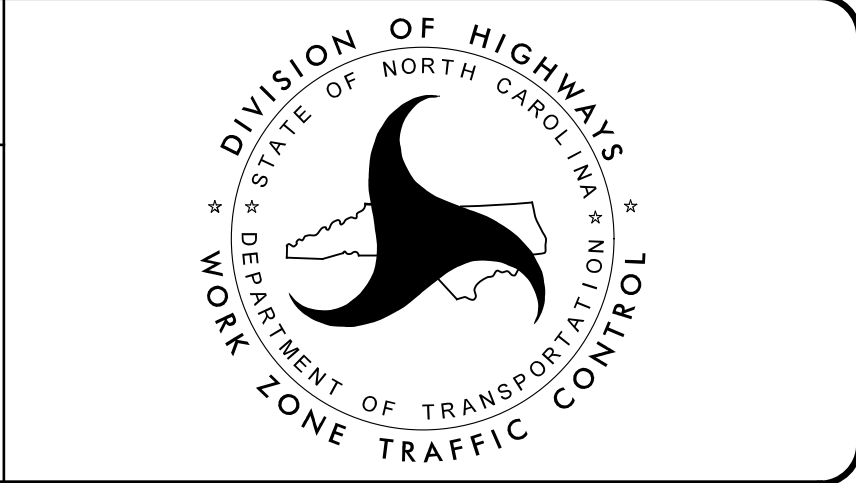
VICINITY MAP
NTS

LOCATION: BRIDGE #740197 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE RD.)

WORK ZONE SAFETY & MOBILITY

"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL 1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561 750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY) PHONE: (919) 773-2800 FAX: (919) 771-2745	
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Plans Prepared By:

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UNLESS ALL SIGNATURES COMPLETED

APPROVED: *A. Chris Johnson*
DATE: 1/30/2019

SEAL

SHEET NO.
TMP-1

PROJECT: 17BP.14.R.117

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-3	TRAFFIC CONTROL PHASE 1
TMP-4	TRAFFIC CONTROL PHASE 2

8/17/99

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. EDGE OF PAVEMENT
- NORTH ARROW
- PROPOSED PAVEMENT

- WORK AREA
- CONSTRUCT UNDER TRAFFIC
- TEMPORARY PAVEMENT

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE I)
- BARRICADE (TYPE II)
- BARRICADE (TYPE III)
- PORTABLE CONCRETE BARRIER
- CONE
- TUBULAR MARKER
- DRUM
- SKINNY DRUM
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- WARNING FLAGS
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

APPROVED: DATE: 1/30/2019

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD
DRAWINGS & LEGEND

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	TMP-1B
POLK COUNTY	CULVERT #740197
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GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

MAINTAIN DRIVEWAY ACCESS TO PROPERTY OWNERS AT ALL TIMES.

PROJECT SEQUENCE (17BP.14.R.116 AND 17BP.14.R.117)

- A) AT NO TIME SHALL BOTH PROJECTS HAVE LANE CLOSURES OR ROAD CLOSURES CONCURRENTLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

- B) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- C) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC BARRIER

- J) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE, WITHOUT APPROVAL BY THE ENGINEER.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC. INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

- K) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT

- L) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

PAVEMENT MARKINGS AND MARKERS

- M) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- N) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

LOCAL NOTES

- 1) TEMPORARY TRAFFIC SIGNALS SHOWN ARE ASSUMED TO BE PORTABLE TEMPORARY TRAFFIC SIGNALS SUPPLIED BY THE CONTRACTOR. PORTABLE TEMPORARY TRAFFIC SIGNALS ARE TO BE SET A MINIMUM OF 2 FEET OUTSIDE OF THE LANE BEING CONTROLLED. THE BOTTOM OF THE SIGNAL HEAD HOUSING SHALL BE A MINIMUM OF 7 FEET ABOVE THE PAVEMENT.
- 2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING A MINIMUM OF ONE (1) MONTH BEFORE THE TEMPORARY TRAFFIC SIGNAL INSTALLATION IS REQUIRED AND 15 DAYS PRIOR TO THE INSTALLATION OF A LANE CLOSURE.
- 3) PLACE REFLECTIVE DELINEATORS ON TOP OF PORTABLE CONCRETE BARRIER PER NCDOT STD 1170.01 SHEET 5 OF 5 - SPACED AT 25 FOOT INCREMENTS PER NCDOT STD 1261.01.
- 4) CONTRACTOR SHALL ASSURE THAT THE ANCHORING OF THE PORTABLE CONCRETE BARRIER AND ASSOCIATED CRASH CUSHIONS DOES NOT INTERFERE WITH EXISTING OR PROPOSED UTILITIES.
- 5) BARRIER SHALL BE ANCHORED WHERE DROPOFFS EXCEED ALLOWABLE DISTANCE, WHERE BARRIER DEFLECTION DOES NOT MEET MINIMUM REQUIREMENTS, OR AS DIRECTED BY THE ENGINEER.
- 6) ACCESS TO HOLBERT ROAD SHALL BE MAINTAINED FOR FIRE & EMERGENCY SERVICES.
- 7) THE CONTRACTOR SHALL PROVIDE ONE MONTH NOTICE TO ENGINEER, COUNTY EMS AND COUNTY SCHOOL OFFICIALS PRIOR TO ROAD CLOSURES.

PHASING NOTES

STAGE 1

1. THE CONTRACTOR SHALL PLACE ALL CONSTRUCTION WARNING ("ROAD WORK AHEAD" W20-1, "END ROAD WORK" G20-2A) SIGNS THROUGHOUT THE PROJECT WITHIN THE TIME FRAME REQUIRED IN THE GENERAL NOTES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, INCLUDING EROSION AND SEDIMENT CONTROL, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.
2. INSTALL EROSION CONTROL DEVICES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS, CLEARING ONLY THE AREA NECESSARY TO INSTALL THE DEVICES.
3. USING APPLICABLE SHEETS FROM NCDOT STD. 1101.02 CONSTRUCT TEMPORARY PAVEMENT FOR STAGE 2 - PHASE 1.
4. INSTALL PIPE AT STATION 11+98 UNDER TRAFFIC.
5. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE SOUTH SIDE OF THE EXISTING BRIDGE #740197. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.
2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.
3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.
4. CONSTRUCT THE NORTH SIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.
5. CONSTRUCT PROPOSED AND TEMPORARY PAVEMENT REQUIRED FOR STAGE 2-PHASE 2.

STAGE 2
PHASE 2 - STEP 1

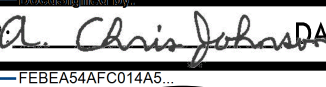
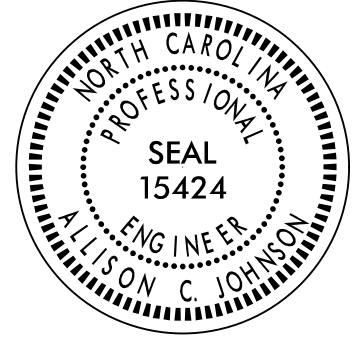
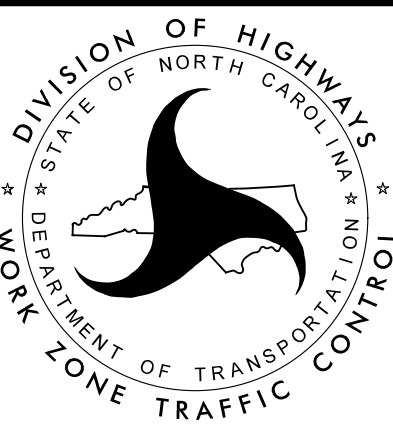
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2. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.
3. CONSTRUCT THE SOUTH SIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.
4. OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

STAGE 2
PHASE 2 - STEP 2

1. CONSTRUCT ANY REMAINING PROPOSED PAVEMENT NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.
2. REMOVE ANY REMAINING TEMPORARY PAVEMENT.
3. CONSTRUCT REMAINING PROPOSED DRAINAGE AND PROPOSED GRADING.

STAGE 3

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRICADES AND DRUMS NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.
2. SEED AND MULCH ALL AREAS DISTURBED AS A RESULT OF THIS CONSTRUCTION.
3. REMOVE ALL EQUIPMENT, TEMPORARY TRAFFIC CONTROL MEASURES, TEMPORARY STOP BAR, AND ROAD WORK SIGNAGE AND OPEN THE PROJECT TO ALL TRAFFIC.

APPROVED:  DATE: 1/30/2019 <small>FEE: \$600.00 PER PAGE</small>			TRANSPORTATION OPERATIONS PLAN
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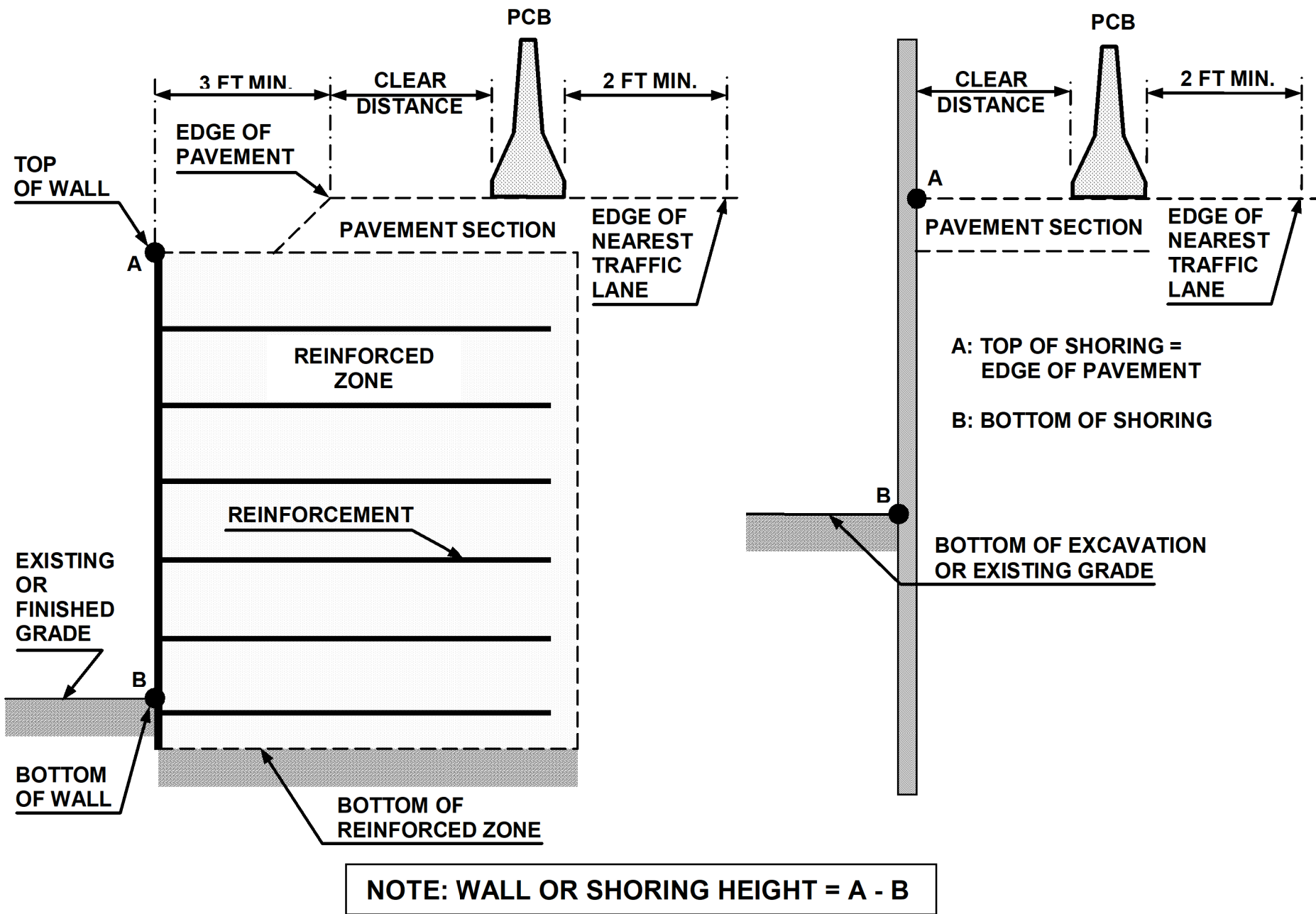


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- 9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.
- 11- SHORING SHALL NOT BE PLACED IN THE STREAM.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	TMP-2
POLK COUNTY	CULVERT #740197
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MINIMUM REQUIRED CLEAR DISTANCE, inches								
Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
	Concrete	>56	32	36	42	45	47	51
		<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

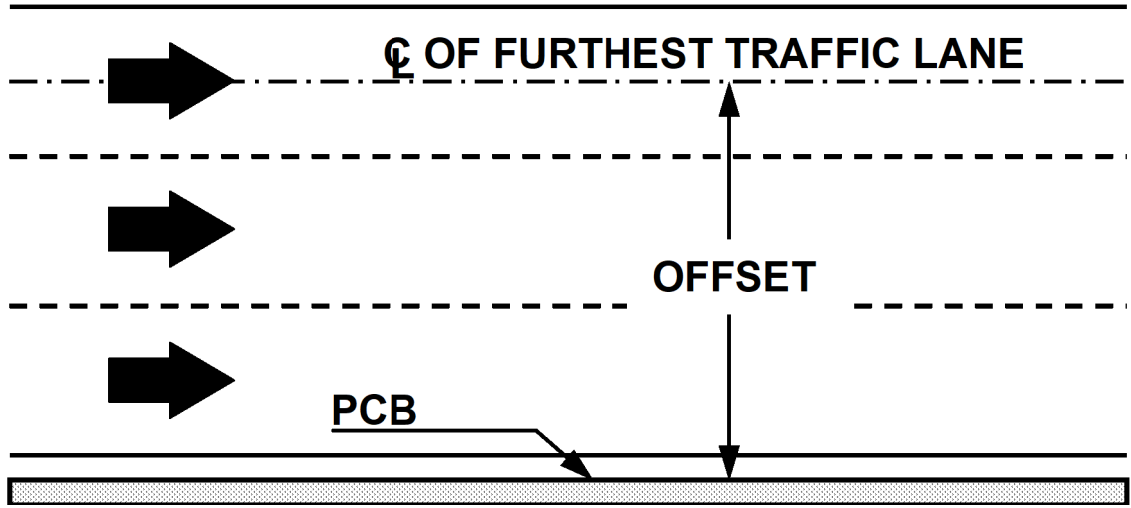


FIGURE B

APPROVED

DocuSigned by:
A. Chris Johnson
1/30/2019

DATE

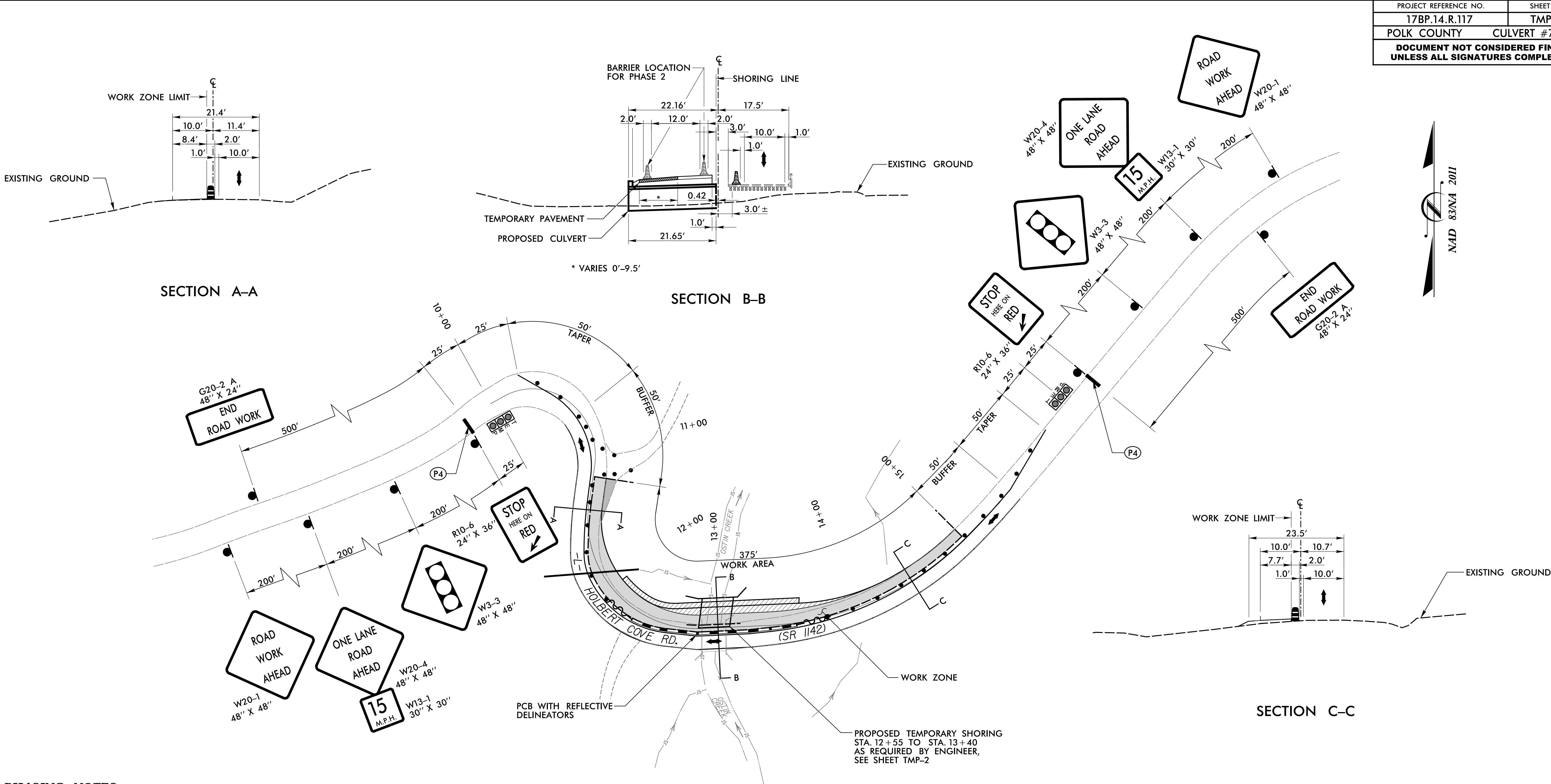
SEAL

PROFESSIONAL
ENGINEER
15424
WILLIAM C. JOHNSON

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE
BARRIER AT
TEMPORARY SHORING
LOCATIONS

8/17/99



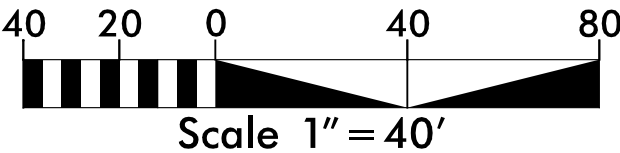
PHASING NOTES

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE SOUTH SIDE OF THE EXISTING BRIDGE #740197. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.
2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.
3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.
4. CONSTRUCT THE NORTH SIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.
5. CONSTRUCT PROPOSED AND TEMPORARY PAVEMENT REQUIRED FOR STAGE 2-PHASE 2.

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
P4	24"	WHITE	PAINT	TEMPORARY STOP BAR



APPROVED: *Chris Johnson* DATE: 1/30/2019

SEAL

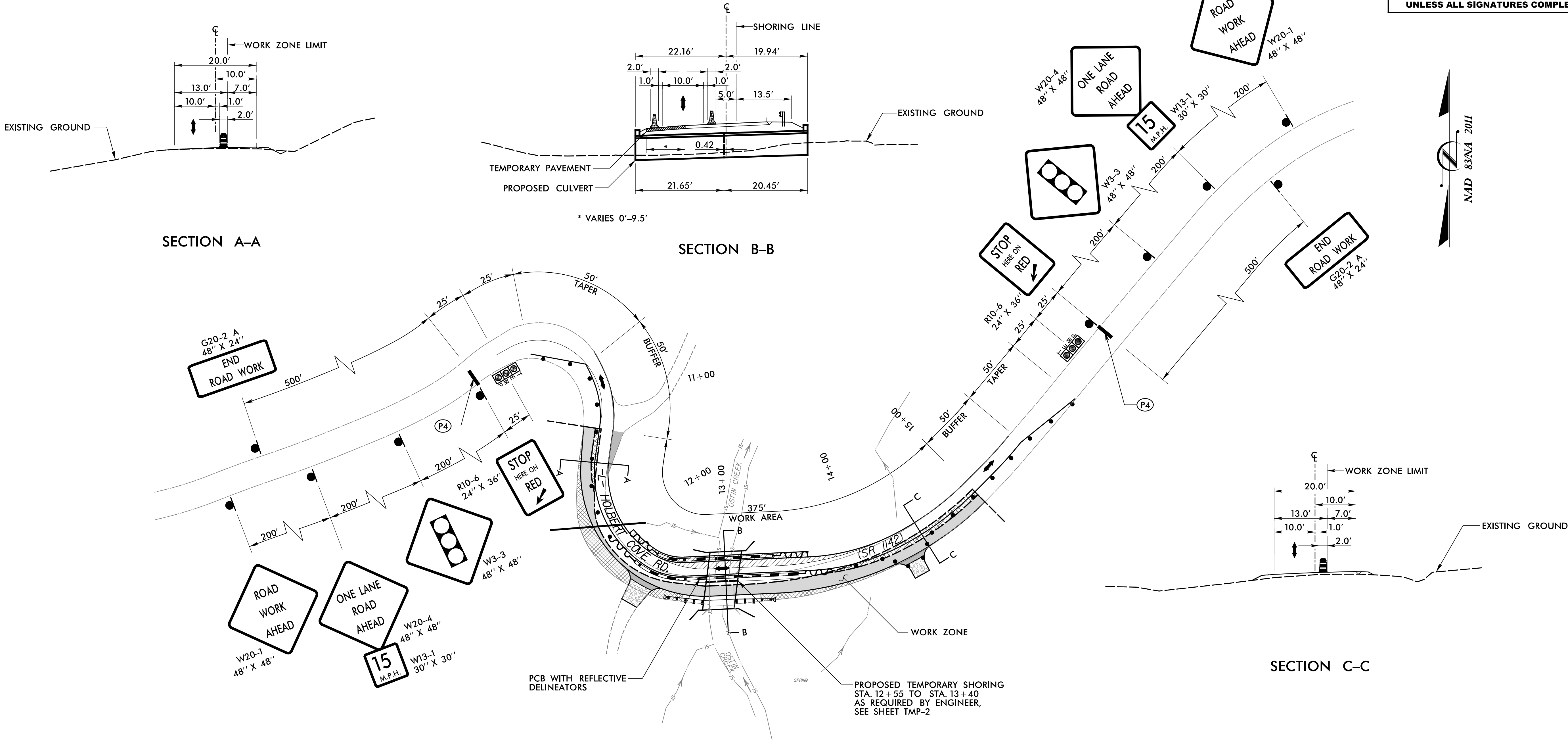
PROFESSIONAL ENGINEER
WILLIAM C. JOHNSON
SEAL 15424

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRAFFIC MANAGEMENT PLAN
PHASE 1

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	TMP-4
POLK COUNTY	CULVERT #740197
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



PHASING NOTES

STAGE 2
PHASE 2 - STEP 1

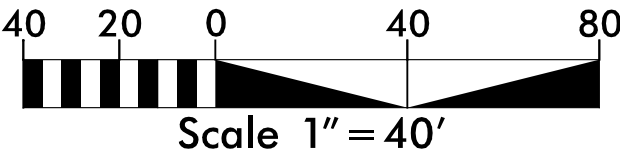
- CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIES/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-4. ADJUST TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC ON THE NORTH SIDE OF THE NEWLY CONSTRUCTED CULVERT FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.
- CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.
- CONSTRUCT THE SOUTH SIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.
- OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

STAGE 2
PHASE 2 - STEP 2

- CONSTRUCT ANY REMAINING PROPOSED PAVEMENT NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.
- REMOVE ANY REMAINING TEMPORARY PAVEMENT.
- CONSTRUCT REMAINING PROPOSED DRAINAGE AND PROPOSED GRADING.

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
P4	24"	WHITE	PAINT	TEMPORARY STOP BAR



APPROVED: *Chris Johnson* DATE: 1/30/2019

SEAL

PROFESSIONAL ENGINEER
WILLIAM C. JOHNSON
15424

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRAFFIC MANAGEMENT PLAN
PHASE 2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLANS

POLK COUNTY

LOCATION: BRIDGE #740197 OVER OSTIN CREEK ON SR 1142 (HOLBERT COVE ROAD)

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	PMP-1
APPROVED: <div>DocuSigned by: A. Chris Johnson FEBEASAP0014AS.</div>	
DATE: 1/30/2019	
SEAL	
<div>Seal of Alison C. Johnson, Professional Engineer, Seal 15424, State of North Carolina</div>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ASPHALT PAVEMENT DESIGN:

ROAD NAME	MARKING	MARKER
SR 1142	PAINT	N/A

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PAVEMENT MARKING SCHEDULE

ASPHALT PAVEMENT DESIGN
(AS SHOWN)

PAVEMENT MARKING LINES
PA – PAINT – WHITE EDGE LINE (4")
PI – PAINT – YELLOW DOUBLE CENTER LINE (4")

INDEX OF SHEETS

SHEET NO.	TITLE
PMP-1	PAVEMENT MARKING & SIGNING PLAN TITLE SHEET
PMP-2	PAVEMENT MARKING & SIGNING PLAN

Plans Prepared By:

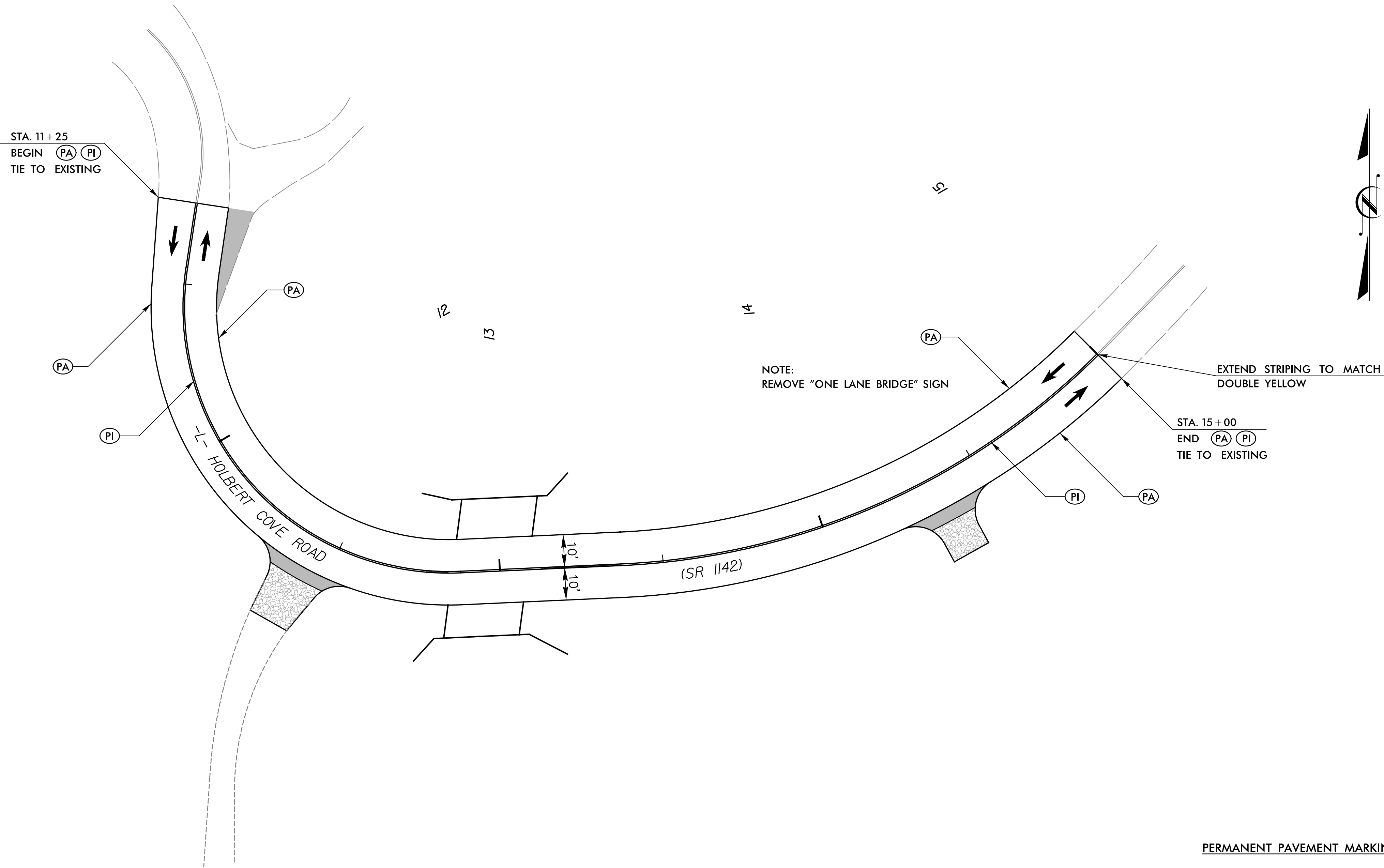


AMERICAN
Engineering

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NC 28226
704-375-2438 NC Lic. No. C-3881

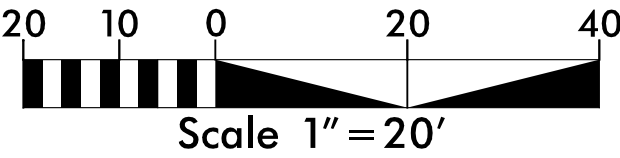
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	PMP-2
POLK COUNTY	CULVERT #740197
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

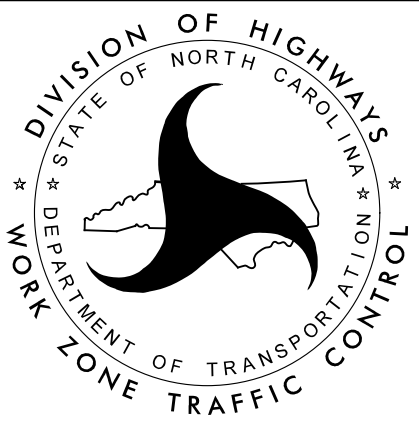


PERMANENT PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
PA	4"	WHITE	PAINT	EDGE LINE
PI	4"	YELLOW	PAINT	DOUBLE CENTER



APPROVED *A. Chris Johnson* DATE: 1/30/2019
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 15424
WILLIAM C. JOHNSON



PAVEMENT MARKING
& SIGNING PLAN

09.08/2019

2/14/2019
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PROJECT: 17BP.14.R.117

CONTRACT: DN00283

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch.....	
1630.05	Temporary Diversion.....	
1605.01	Temporary Silt Fence.....	
1606.01	Special Sediment Control Fence.....	
1622.01	Temporary Berms and Slope Drains.....	
1630.02	Silt Basin Type B.....	
1633.01	Temporary Rock Silt Check Type-A.....	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM).....	
1633.02	Temporary Rock Silt Check Type-B.....	
	Wattle / Coir Fiber Wattle.....	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM).....	
1634.01	Temporary Rock Sediment Dam Type-A.....	
1634.02	Temporary Rock Sediment Dam Type-B.....	
1635.01	Rock Pipe Inlet Sediment Trap Type-A.....	
1635.02	Rock Pipe Inlet Sediment Trap Type-B.....	
1630.04	Stilling Basin.....	
1630.06	Special Stilling Basin.....	
	Rock Inlet Sediment Trap:	
1632.01	Type A.....	
1632.02	Type B.....	
1632.03	Type C.....	
	Skimmer Basin.....	
	Tiered Skimmer Basin.....	
	Infiltration Basin.....	

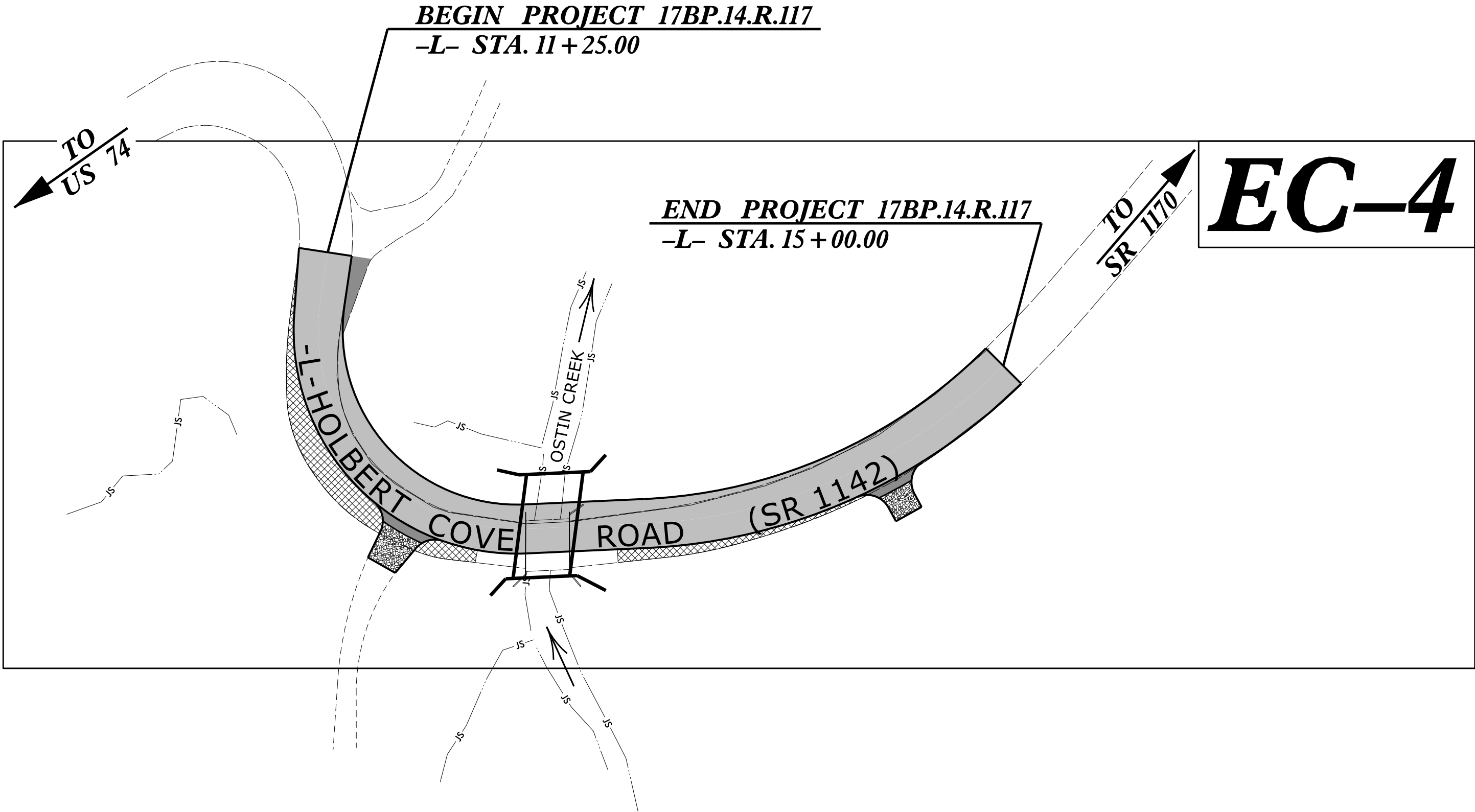
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

POLK COUNTY

LOCATION: BRIDGE #740197 OVER OSTIN CREEK
ON SR 1142 (HOLBERT COVE ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & CULVERT



ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

Refer To E. C. Special Provisions
for Special Considerations.

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.

NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488-0902

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

GRAPHIC SCALES



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2018
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.



M A Engineering
Consultants, Inc. 598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 29, 2015

LETTING DATE:
MARCH 12, 2019

PAUL CAMERON, PE
PROJECT ENGINEER
LEVEL III CERTIFICATION
NUMBER 3624

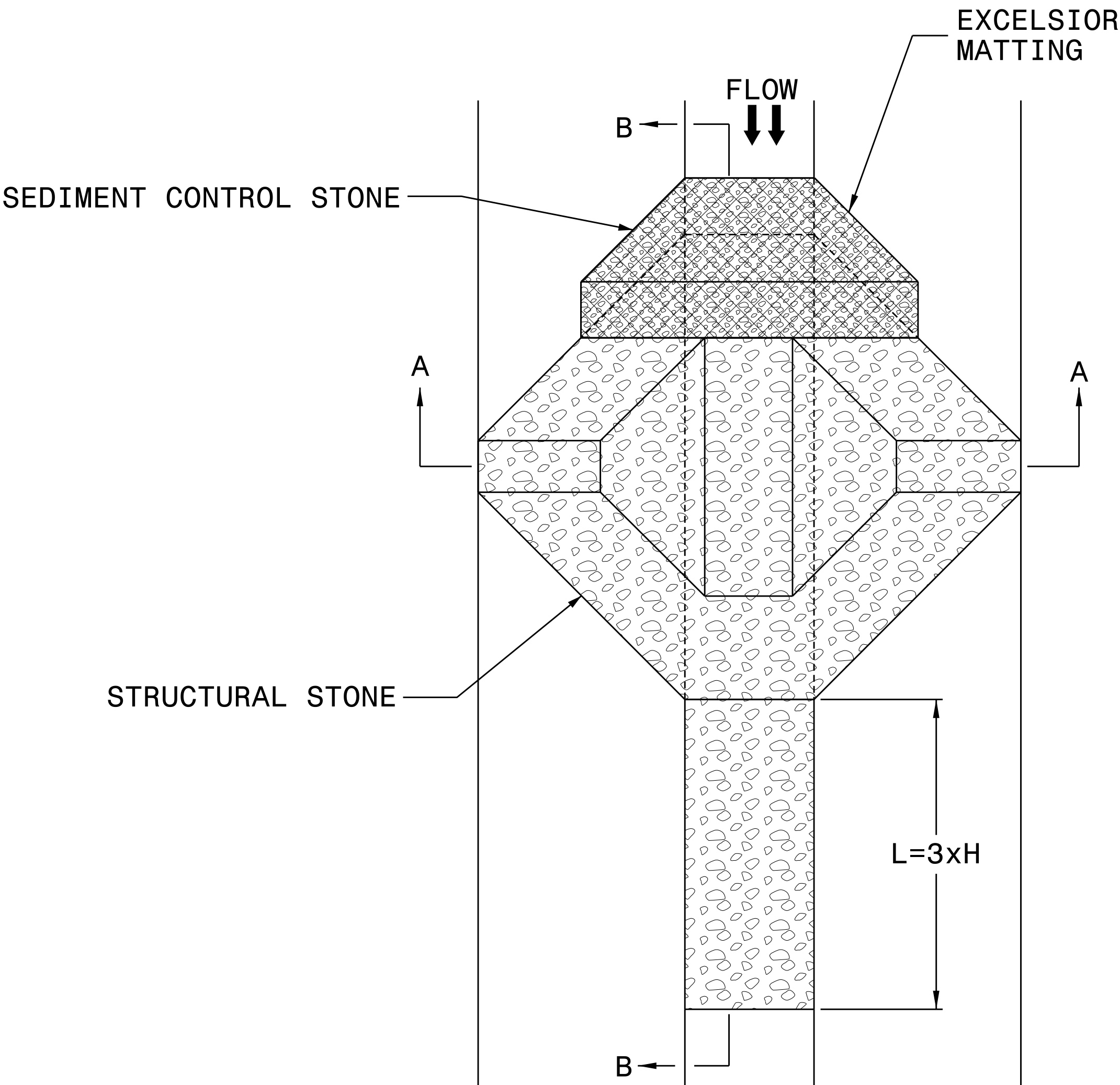
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

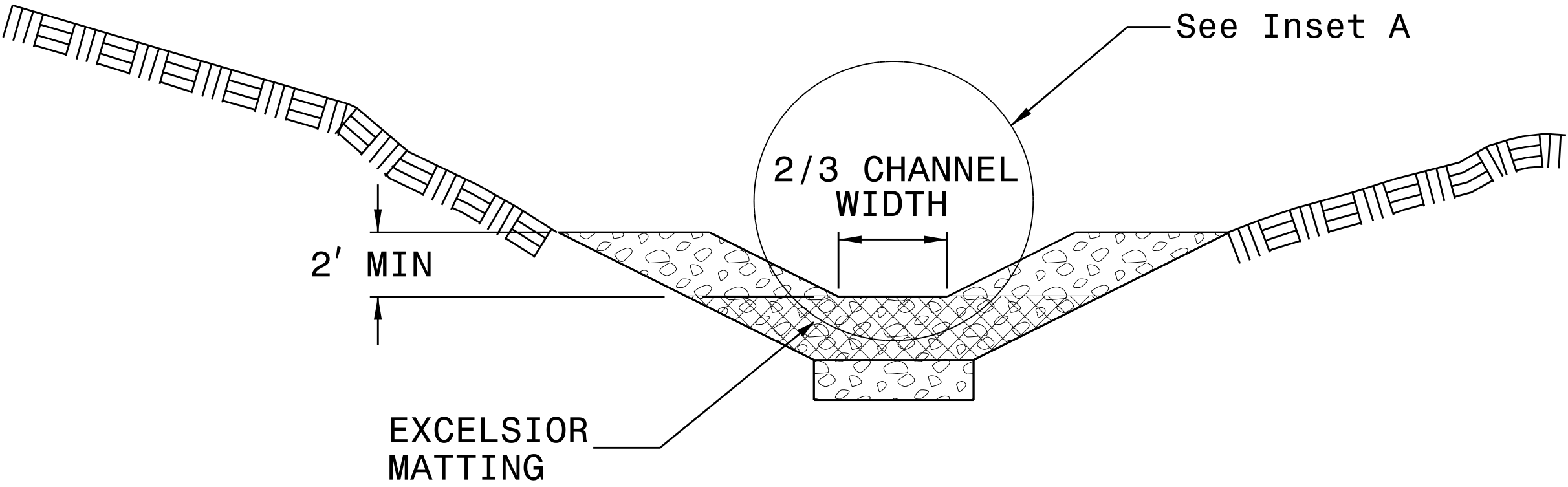
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	EC-2
POLK COUNTY	CULVERT #740197

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



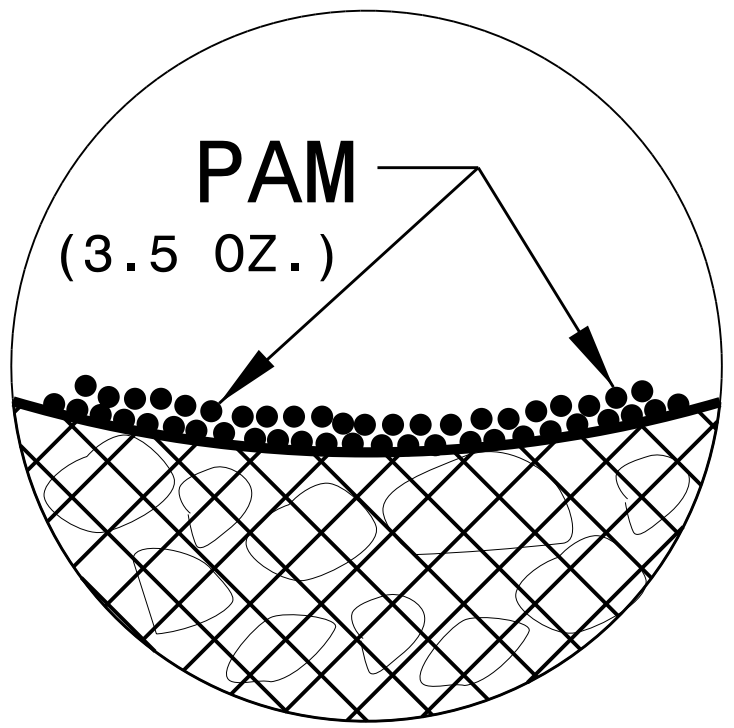
SECTION A-A

NOTES

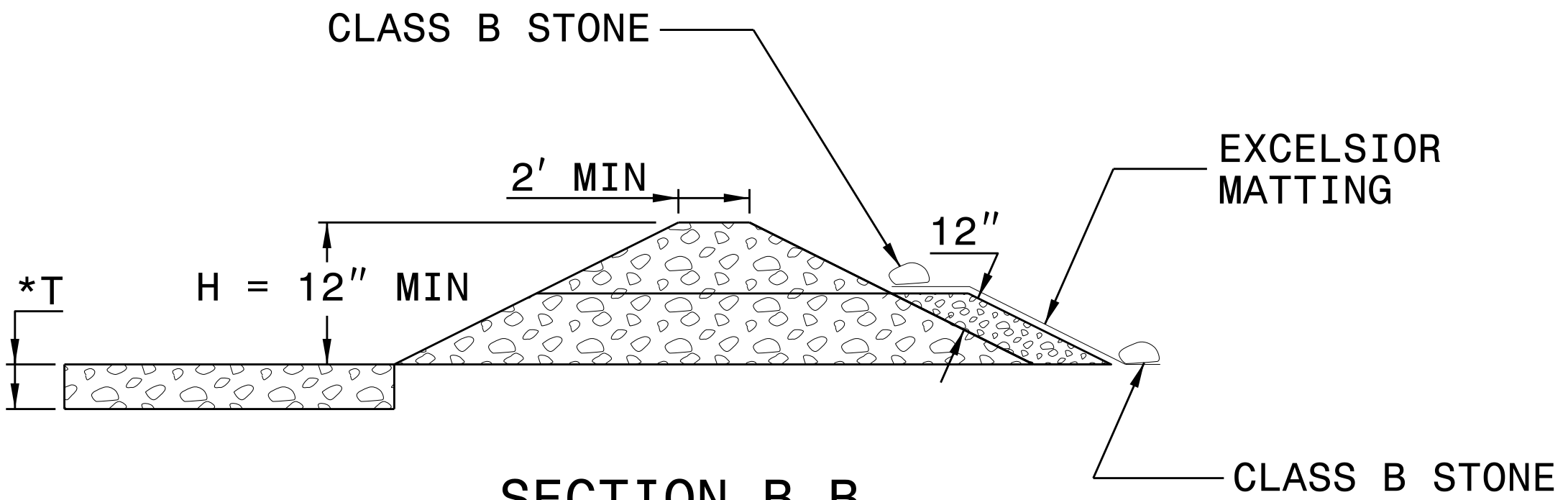
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



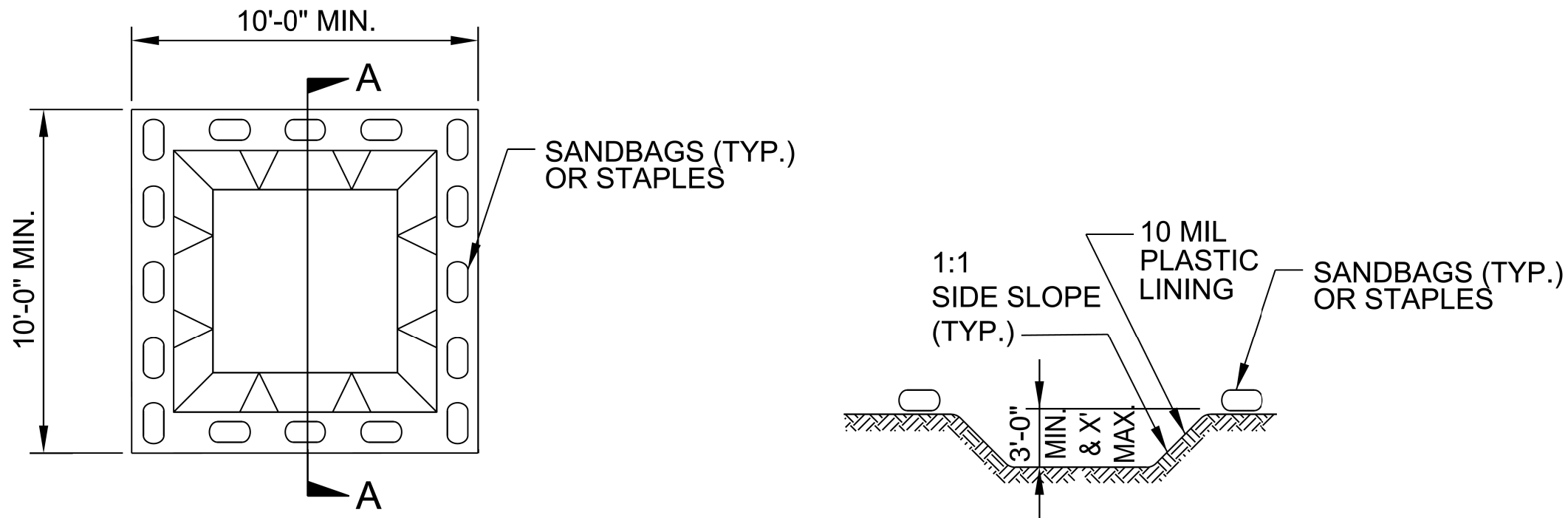
SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	EC-2A
POLK COUNTY	CULVERT #740197

ONSITE CONCRETE WASHOUT
STRUCTURE WITH LINER



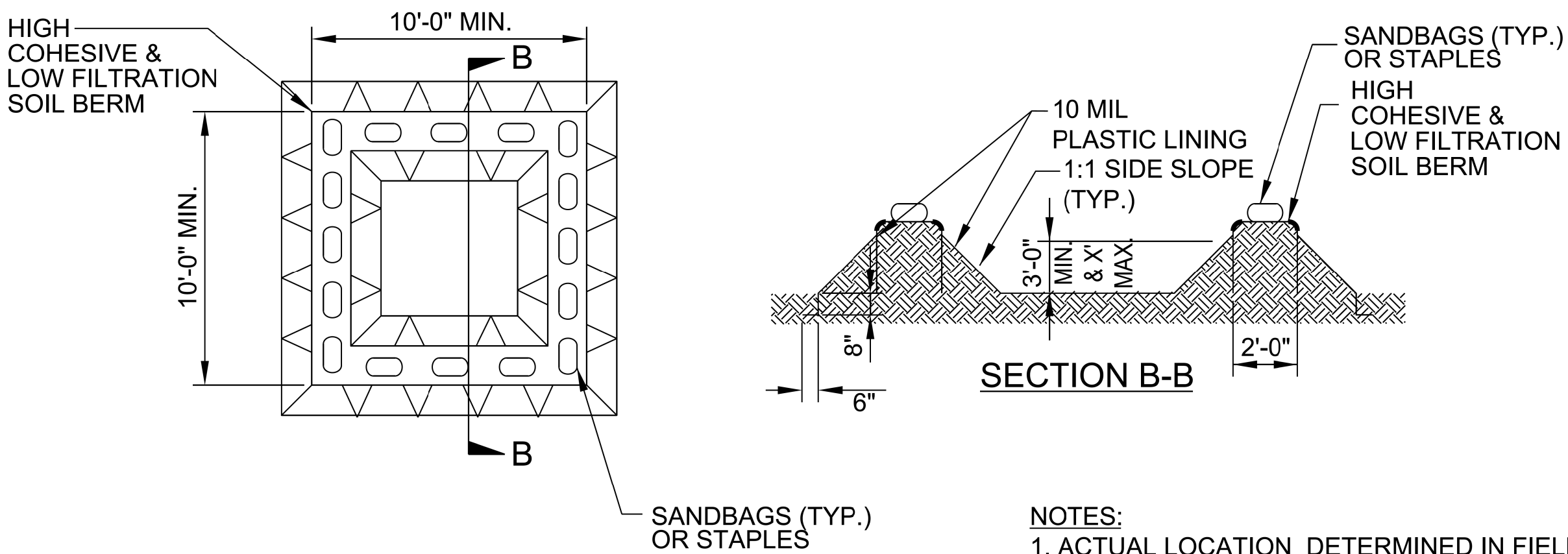
SECTION A-A

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

8/17/99

<div>CULVERT CONSTRUCTION SEQUENCE STA. 12 + 97 –L–</div>		PROJECT REFERENCE NO.	SHEET NO.
		17BPJ4.RJ17	EC-2B
		POLK COUNTY ROADWAY DESIGN ENGINEER	CULVERT #740197 HYDRAULICS ENGINEER

PHASE I	PHASE II	PHASE III
<div>1. PLACE SPECIAL STILLING BASIN IN DESIRED LOCATION 2. INSTALL TEMPORARY 36" PIPE W/ELBOWS ACCORDING TO NCDOT'S BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL, AND IMPERVIOUS DIKES. 3. PUMP IMPOUNDED FLOW TO SPECIAL STILLING BASIN</div>	<div>4. INSTALL TRAFFIC CONTROL PLAN STAGE 1 APPROACHES AND TRAFFIC CONTROL DEVICES 5. REMOVE EXISTING BRIDGE AS NEEDED FOR STAGE 1 OF TRAFFIC CONTROL PLAN 6. INSTALL PORTION OF ALUMINUM BOX CULVERT (ABC) AS INDICATED IN STAGE 1 AND CONSTRUCT UPSTREAM CULVERT BENCHES.</div>	<div>8. SWITCH TO STAGE 2 OF TRAFFIC CONTROL PLAN 9. INSTALL STAGE 2 (REMAINING) PORTION OF ABC AND CONSTRUCT THE DOWNSTREAM CULVERT BENCHES 10. REMOVE TEMPORARY DIKES, TEMPORARY PIPES AND SPECIAL STILLING BASIN</div>

MATTING FOR EROSION CONTROL

PERMENANT SOIL REINFORCEMENT MAT


[illegible]

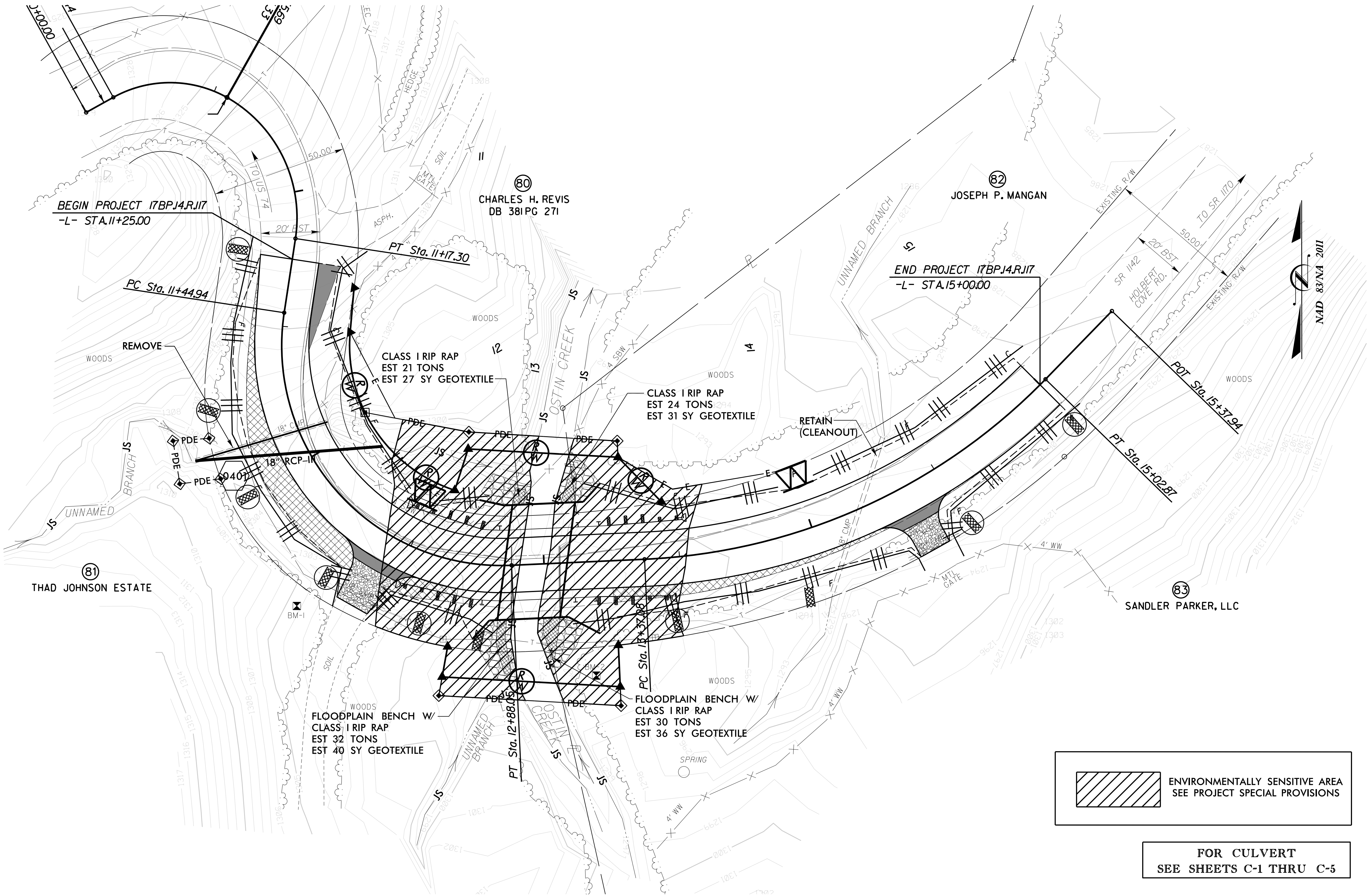
SOIL STABILIZATION TIME FRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

8/17/99

1/29/2019
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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.117	EC-4
POLK COUNTY	CULVERT #740197
 M A Engineering Consultants, Inc.	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	
NC License: F-0160	

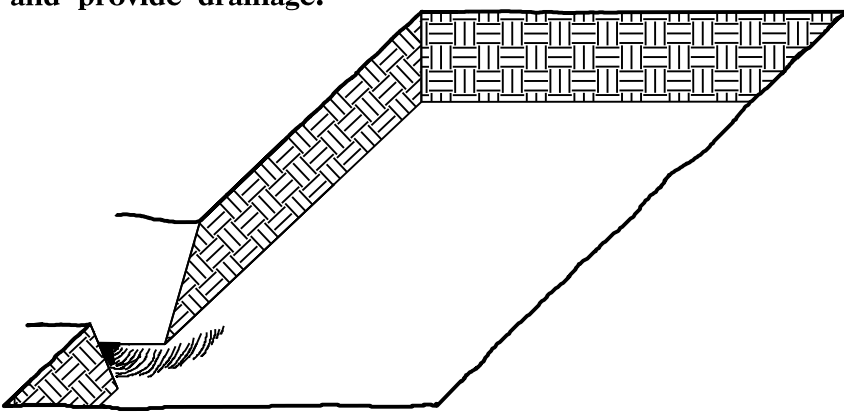


PROJECT REFERENCE NO.	SHEET NO.
17BPJ4RJ17	EC-RF-1
POLK COUNTY	CULVERT #740197

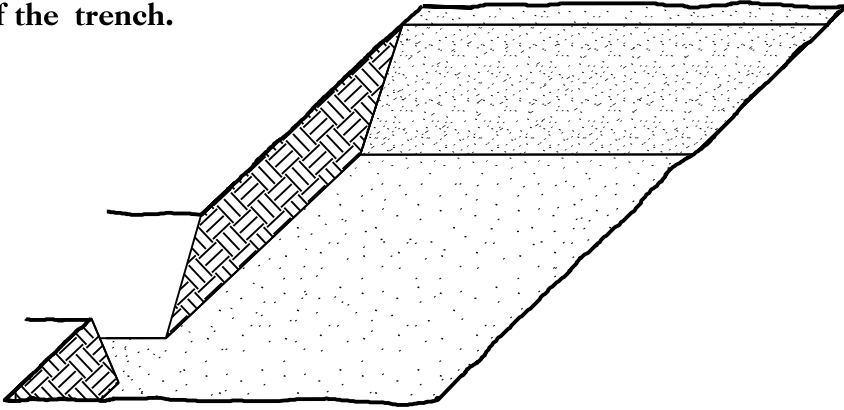
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

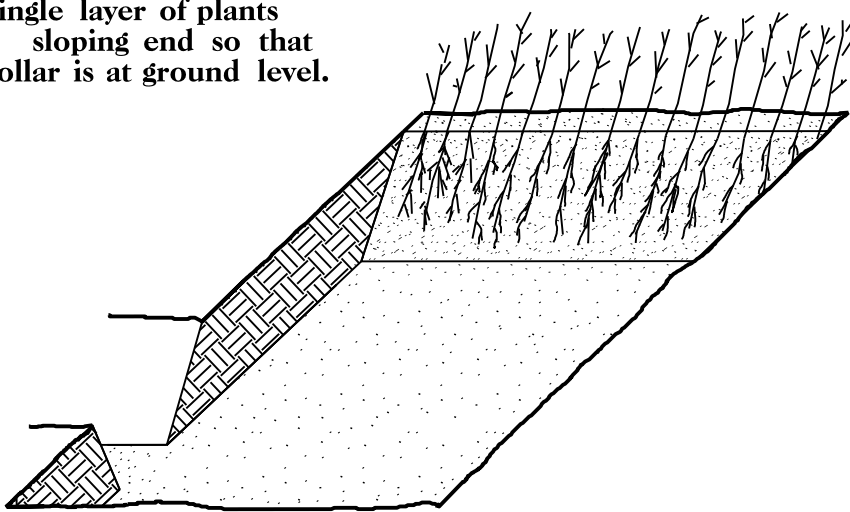
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



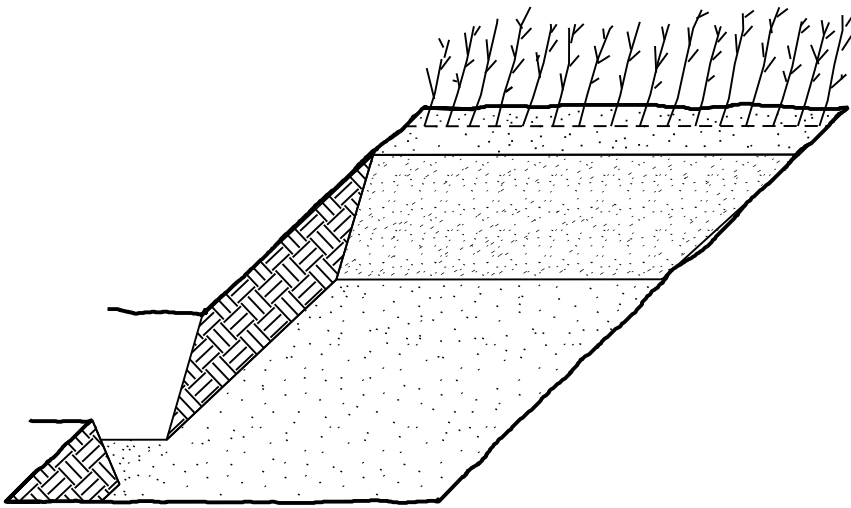
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

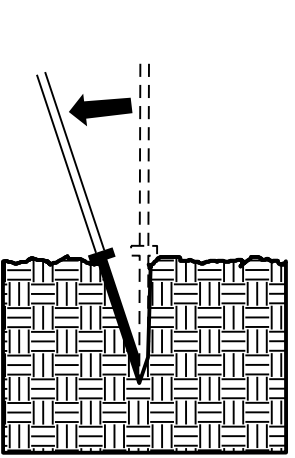


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

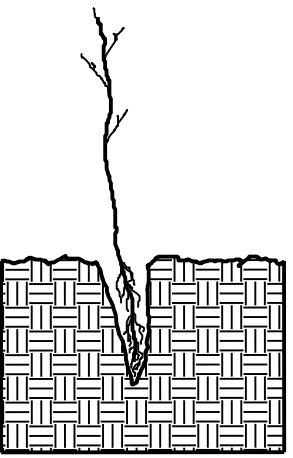


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

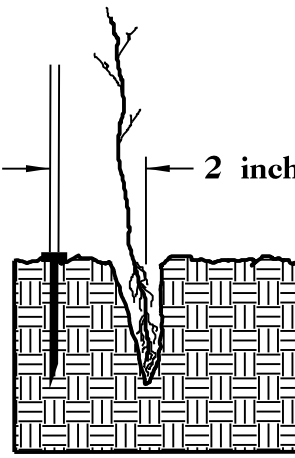
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



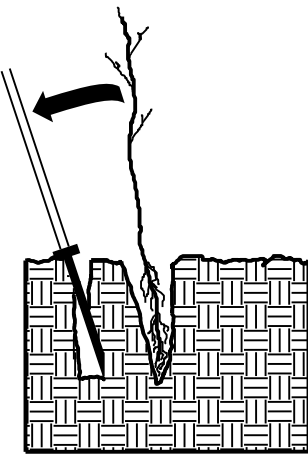
1. Insert planting bar as shown and pull handle toward planter.



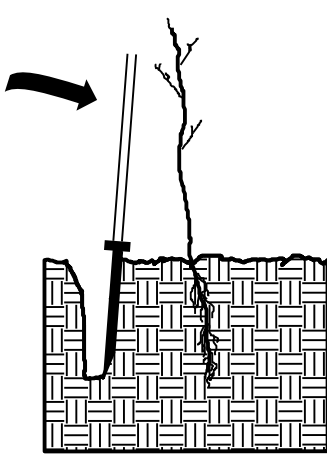
2. Remove planting bar and place seedling at correct depth.



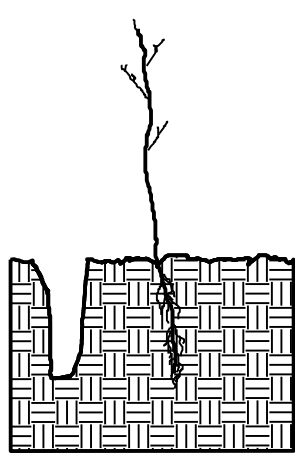
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



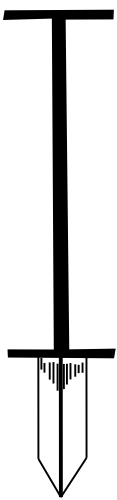
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T.- ROADSIDE ENVIRONMENTAL UNIT